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POLYGRAPHS FOR COUNTERINTELLIGENCE PURPOSES IN THE DEPARTMENT OF DEFENSE

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

SECOND SESSION

MARCH 7, 1984

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POLYGRAPHS FOR COUNTERINTELLIGENCE PURPOSES IN DEPARTMENT OF DEFENSE

WEDNESDAY, MARCH 7, 1984

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The committee met, pursuant to notice, at 10:08 a.m., in room SR-222, Russell Senate Office Building, Senator John Tower (chairman) presiding.

Present: Senators Tower, Warner, Levin, Bingaman, and Dixon.

Staff present: James F. McGovern, staff director and chief counsel; Arnold L. Punaro, staff director for the minority; Alan R. Yuspeh, general counsel; Brenda K. Hudson, assistant chief clerk; George K. Johnson, Jr., and David S. Lyles, professional staff members; Marie Chaillet, staff assistant; and Patricia L. Watson, research assistant.

Also present: Les Brownlee, and Guy L. Copeland, assistants to Senator Warner; Dale F. Gerry, assistant to Senator Cohen; Jon Etherton, assistant to Senator Jepsen; John Roddy, assistant to Senator East; Jeffrey B. Subko, assistant to Senator Exon; Edwin Jayne and Michael A. Feinberg, assistants to Senator Bingaman; Charles C. Smith, Jr., assistant to Senator Dixon; and Claudette V. Humphreys, assistant to Senator Levin.

OPENING STATEMENT BY SENATOR JOHN TOWER, CHAIRMAN

Chairman TOWER. The committee will come to order.

The committee meets this morning to consider a proposed change in the use of the polygraph in the Department of Defense.

Last year, President Reagan issued National Security Decision Directive 84 dealing with certain steps to be taken by Federal agencies to protect classified information and to avoid unauthorized leaks of such information.

At the time NSDD 84 was issued, there was substantial interest in provisions of that directive dealing with possible use of the polygraph in leak investigations.

The Department of Defense has also been developing its own policies for modifying use of the polygraph with the Department for certain counterintelligence purposes. The DOD program is separate and apart from NSDD 84.

The purpose of our hearing today is to consider the changes which the Department wishes to make in its practices regarding use of the polygraph.

We have with us this morning Gen. Richard G. Stilwell, the Deputy Under Secretary of Defense for Policy, who will explain these modified policies and the rationale for them.

On a personal note I might say I am delighted to see Dick Stilwell here. He has a long and distinguished career as a military officer and now in a civilian capacity. I think I first got to know him in Bangkok 19 years ago.

Is that about right?

General STILWELL. That is right on the nose, Mr. Chairman.

Chairman TOWER. I have followed his career ever since. Last year, in the wake of NSDD 84, members of our committee, including our distinguished former ranking minority member, Senator Henry Jackson, expressed concern about the reliability of the polygraph and the appropriateness of the new uses.

Accordingly, a provision was included in the fiscal year 1984 Defense Department authorization bill which proposed a moratorium on expanded polygraph use until April 15 of this year.

In addition, it was agreed that our committee would look more closely at the issue prior to the April 15 date.

Since the concerns of many Senators seem to deal with the reliability of the polygraph, we are pleased to have with us this morning a panel of five experts on the polygraph. I will introduce our panel after General Stilwell has completed his testimony and answered questions.

I will note, however, that this panel represents a broad range of experience and opinion with regard to the polygraph and should present our committee with extensive background information about this instrument and its appropriate use.

At this time Senator Nunn is detained but should be here later.

I would like to defer at this point to Senator Bingaman, who has taken a very lively interest in this issue, for any remarks he might wish to make.

Senator BINGAMAN. Thank you, Mr. Chairman.

As you indicated in your remarks, this issue came up last year and Senator Jackson was the primary person leading the concern on the Senate side about the expanded use of the polygraph, in particular in the Defense Department.

I was interested at that time and am still interested in exploring the justification that the Defense Department sees for expanded use of polygraphs, their own view as to the extent to which such examples are reliable and can be relied upon to make personnel and other decisions, and also some of the side effects resulting from expanded use of polygraphs; these may be unintended but could be still very real for example, stifling the flow of nonclassified information.

That has been referred to in several previous discussions as the chilling effect of the whole polygraph procedure on the free flow of information, which is so vital to our Governmental process.

So, I am looking forward very much to the testimony, Mr. Chairman. I commend you for convening this hearing and going forward on this important issue.

Chairman TOWER. Thank you, Senator.

General Stilwell, you may submit your statement for inclusion in its entirety in the record and summarize it or you may present it in full. In any case, you may proceed any way you see fit.

Any supporting material or data that you care to supply for the record we will be delighted to incorporate in the record.

General, you proceed as you see fit and then we will go to questions.

STATEMENT OF GEN. RICHARD G. STILWELL, U.S. ARMY (RETIRED), DEPUTY UNDER SECRETARY OF DEFENSE FOR POLICY

General **STILWELL**. Thank you, Mr. Chairman, Senator Bingaman, Senator Dixon. It is a distinct honor to appear before the Senate Armed Services Committee.

You see here, sir, an old combat soldier in a new role, but one that he considers just as vital to the security of our Nation as his former activities on the battlefield.

I do appreciate this opportunity and I will summarize the Department's position with respect to proposed changes in this longstanding polygraph policy.

As you have clearly and succinctly pointed out, sir, there have been misconceptions as to the interrelationship of the initiative we are discussing today and the National Security Decision Directive 84. I would like to underline that there are basically none.

Our proposal had its roots in our investigations and conclusions fully a year before NSDD 84 and moreover, the focus is quite different in that NSDD 84 was directed at the question of leaks whereas the sole purpose of our initiative is to provide greater security assurance that our most sensitive programs are not penetrated by hostile intelligence agents than it has now.

Indeed, it was that concern that the existing personnel security program did not provide such assurance which motivated consideration of the polygraph to supplement this process.

Traditionally we have had a three-prong approach to providing security for sensitive programs: Information security, physical security, and personnel security.

Historically the goal of personnel security has been to determine the trustworthiness of individuals prior to their being granted access to classified information or prior to their assignment to particularly sensitive duties and their continued eligibility thereafter, something we don't take lightly.

The keystone to personnel security in the Defense Department, as in most Government agencies, has been field investigation or background investigation. Rarely, however, do these investigations disclose evidence of covert contact or attempted penetration.

It is important to keep in mind investigations typically occur before access to classified information has been obtained and for the most part experience has shown hostile intelligence targets the person with access after he or she is cleared, not before in any case.

In addition to the basic limitation on the field investigation, we experienced in the late seventies and the early eighties a rather serious degradation of the background investigation, itself.

On the one hand resources to conduct these investigations were cut while requests for investigation mounted. On top of this we saw the effectiveness of the investigation itself being eroded because sources of information that had previously been available to investigators were for various reasons being foreclosed.

One reason for this was the Privacy Act. Another was legal restraints placed on the accessibility of investigators to school records. And finally, many local law enforcement jurisdictions reacting to both of those, the privacy and Federal guidelines, severely limited access to persons doing background investigation to law enforcement and criminal records.

In short, investigations we were doing were becoming less and less effective overall and at the same time espionage seemed to be on the upsweep.

The cases of Boyce & Lee, Kampiles, Lieutenant Cook of the Air Force, Helmich of the Army, and William Holden Bell, all are recent reminders that our adversaries' efforts to penetrate the U.S. intelligence and defense establishment are relentless, and regrettably often successful.

Against this background, Mr. Chairman, in November of 1981 I commissioned a select panel composed of senior Defense officials and charged it with reviewing the DOD personnel security program from top to bottom and developing recommendations for improvement of the existing system.

The panel issued a lengthy report 6 months later recommending a number of actions to enhance the personnel security program. I am pleased to report that we have taken action on virtually all of them.

Of particular interest to this committee, however, was the recommendation that a limited counterintelligence scope polygraph be considered to assist in determining the initial and continuing eligibility of a limited number of individuals to positions involving access to extremely sensitive classified information.

My office subsequently incorporated this recommendation into a proposed revision of the Department's polygraph directive which was already in the works.

After almost 2 years of consideration which includes two rounds of coordination internally throughout the Department and repeated discussions with the public and with congressional staffs, that original proposal has been modified substantially.

But its original purpose remains the same: to deter and detect espionage against our most sensitive programs.

Before addressing the specific changes, let me very briefly comment on the Department's general view of the polygraph as an investigative tool. We use it only as an aid in support of other investigation techniques.

In additional, we prohibit any action adverse to the subject being taken solely on the basis of an analysis of polygraph charts and have developed comprehensive safeguards to govern conduct of the examination to protect the interests of the subject.

Further, we recognize the value of the polygraph is largely dependent on the quality and professionalism of the polygraph examiner, and as I am sure the panelists will confirm, have, therefore, established very stringent standards for the selection, the training and supervision of our polygraph examiners whom we believe are second to none.

In that, of course, I include the polygraph examiner staff of the National Security Agency which is, of course, part of the Department.

Under existing policy the polygraph is used primarily in criminal investigations and counterintelligence investigations, the latter including investigations of unauthorized disclosures of classified information.

It is used for screening civilian applicants for employment only at the National Security Agency. The most significant change proposed in our extant policy is that it would permit the heads of DOD components; that is, Secretaries of Departments, for example, with OSD approval to establish a limited counterintellegence scope polygraph examination as a condition of access to information protected within special access programs created under Executive Order 12356 to protect highly sensitive classified information.

These programs may include both intelligence and research and development and could be established to protect military operational data as well.

Under the proposed polygraph policy the department or agency head who establishes the special access program may request to use a limited polygraph examination as a condition of initial as well as continuing access to information protected within such programs based on its determination that a limited polygraph is warranted due to the extraordinary risk to national security if the information at issue were compromised.

So, we are not talking about all classified intelligence, but a very limited portion. That is the major change.

A second change, less significant in importance, is to permit the Director of the Defense Intelligence Agency to establish a number of positions within the Defense Intelligence Agency which require the same type of polygraph examination as a condition of assignment thereto.

We estimate that even if this program were in effect, in any given year, there would be less than 1 percent of the Department's employees asked to take a polygraph examination, which you must remember would be limited to question of a counterintelligence nature and would involve employees working on a daily basis in our most sensitive intelligence work.

It is also important, sir, to stress what will happen if an employee either refuses to take an examination or takes it, but shows deception to questions he is asked.

Under our proposal no action could be taken on the basis of a person's reaction as reflected on the chart unless additional investigation produced derogatory information concerning the individual involved which in and of itself required action.

Exceptions to this rule would have to be approved by the Secretary of Defense or the Secretary of one of the three military departments.

Furthermore, refusal to take such examination could not be the basis for firing an employee.

Under current policy, any employee who refused to take such an examination as a condition of access would either remain in his job or would be placed in a position of equal pay or grade within the Department of Defense.

In addition to these limitations, we have adopted a wide range of safeguards to protect the rights of the examinee before, during and after the polygraph examination. These are set forth on pages 22, 23, and 24 of my longer statement.

We have made every effort we can think of to ensure that our employees understand what their rights are, that they are treated fairly and that their privacy is protected.

I also want to comment briefly on the impact of these proposed changes on morale. Some quarters, Mr. Chairman, maintain there will be an adverse effect and many will refuse to cooperate.

We simply do not believe that will be the case and it might be well to ask Mr. Ansley of NSA what their experience has been.

As I stated, the questions involved are not of a personal nature nor may the results of the polygraph examination be relied upon as the sole basis for action taken against the employee.

These expectations with respect to morale and rate of refusal are also borne out by an Air Force survey of 3,500 individuals under a program that I authorized before the effective date of the moratorium which restricts DOD polygraph activities to those authorized prior to August 6, 1982; 3,500 individuals were required to take the counterintelligence scope examination as a condition of obtaining access to a highly classified Air Force project. You can probably guess what that is.

None of the 3,500 refused to take the limited scope polygraph. Of the 3,500, 7 were shown as deceptive on the examination. Of these seven, five were subsequently resolved and cleared by further investigation and two cases are still pending.

Significantly, in the survey conducted on an anonymous basis 98 percent of the respondents, of the 3,500, indicated that they were not offended, humiliated or degraded by the examination.

They believed that the examination enhanced the security of the work environment and that they would undergo a similar examination in the future if asked.

In conclusion, Mr. Chairman, we believe on the basis of our extensive experience with the polygraph, which goes back 40 years, that this unique investigative tool can, when properly controlled, be employed in a manner that does not violate the rights and privacy of our employees and yet would provide the Department with a greater degree of security assurance with respect to our most sensitive programs than we now have.

We believe that the mere possibility of being subjected to a polygraph examination will act as a powerful deterrent to those individuals who might consider an attempt to penetrate or compromise such programs.

Personally, sir, my rank and record notwithstanding, I do not consider it an intrusion on my privacy for the Government to ask me, prior to giving me the capability to do this Government harm, whether I am working for the other side. Indeed, it only seems prudent to do so.

Mr. Chairman, I hope that I have helped in clarifying for you and your distinguished colleagues the nature, the extent and the purpose of changes in our polygraph policy now under consideration.

We welcome any and all suggestions that your committee may wish to offer us in this regard and I am ready, sir, to answer any questions.

[The prepared statement of General Stilwell follows:]

Prepared Statement of Gen. Richard G. Stilwell, USA (Ret.), Deputy Under Secretary of Defense for Policy

MR. CHAIRMAN. I APPRECIATE THIS OPPORTUNITY TO APPEAR BEFORE THE COMMITTEE TODAY TO EXPLAIN THE NATURE, EXTENT AND PURPOSE OF THE CHANGES THE DEPARTMENT IS CONSIDERING TO ITS POLICY ON USE OF THE POLYGRAPH.

IT APPEARS FROM CONTINUING MEDIA COVERAGE, AS WELL AS PUBLIC AND CONGRESSIONAL INQUIRIES AND COMMENTS, THAT A NUMBER OF MISCONCEPTIONS CONTINUE TO EXIST REGARDING NOT ONLY THE PROPOSED CHANGES, BUT ALSO THE VALIDITY OF USE OF THE POLYGRAPH IN GENERAL. IT IS MY SINCERE HOPE THAT BY CLARIFYING THESE MATTERS I MIGHT PROVIDE A CLEARER AND MORE ACCURATE PERSPECTIVE ON THESE ISSUES AND THEREBY ENCOURAGE SUPPORT OF THE DEPARTMENT'S PROPOSAL TO USE THIS UNIQUE INVESTIGATIVE TECHNIQUE AS A MEANS TO ACHIEVE GREATER SECURITY FOR OUR MOST SENSITIVE CLASSIFIED INFORMATION.

BEFORE ADDRESSING SPECIFICS OF THE DEPARTMENT'S PROPOSED USE OF THE POLYGRAPH, I BELIEVE IT WOULD BE WORTHWHILE TO ACQUAINT YOU WITH SOME BASIC FACTS CONCERNING THE POLYGRAPH INSTRUMENT, POLYGRAPH EXAMINATION, AND HISTORY OF USE OF THE POLYGRAPH.

SINCE THE INTRODUCTION OF THE FORERUNNER OF MODERN POLYGRAPH INSTRUMENTS SOME 60 YEARS AGO, THE POLYGRAPH INSTRUMENT HAS COME TO BE PERCEIVED AS BEING CAPABLE, IN AND OF ITSELF, OF DETECTING DECEPTION. THE TERMS "POLYGRAPH" AND "LIE DETECTOR," HAVE IN FACT, BECOME VIRTUALLY SYNONYMOUS.

IN ACTUALITY, THERE IS NO SUCH THING AS A "LIE DETECTOR."

THE POLYGRAPH INSTRUMENT IS RATHER, A ELECTROMECHANICAL DEVICE THAT IS CAPABLE OF MEASURING AND RECORDING CERTAIN PHYSIOLOGICAL FUNCTIONS. ALL POLYGRAPH INSTRUMENTS USED BY THE DEPARTMENT HAVE AT LEAST THREE, BUT MORE OFTEN 4 OR 5 CHANNELS WHICH RECORD, AS A MINIMUM -- RESPIRATION -- ELECTRODERMAL RESPONSE -- BLOOD VOLUME -- AND HEART RATE. SINCE THE NATIONAL SECURITY AGENCY TESTIMONY HAS ALREADY DISCUSSED THE TECHNICAL ASPECTS OF THE POLYGRAPH -- I WILL NOT REPEAT THAT INFORMATION AT THIS TIME.

I WOULD EMPHASIZE THAT ATTACHMENT OF THE INDIVIDUAL TO THE POLYGRAPH INSTRUMENT IS BUT ONE ASPECT OF A POLYGRAPH EXAMINATION. ESSENTIALLY, A POLYGRAPH EXAMINATION CONSISTS OF THREE PHASES.

IN THE FIRST --OR PRE-TEST PHASE-- THE POLYGRAPH EXAMINER REVIEWS ALL THE INFORMATION AVAILABLE CONCERNING THE EXAMINEE, AND THE FACTS OF THE PARTICULAR INVESTIGATIVE CASE. IT IS ALSO DURING THIS PHASE THAT EXAMINEES WOULD BE ADVISED OF THEIR RIGHT TO LEGAL COUNSEL, TO HAVE LEGAL COUNSEL AVAILABLE FOR CONSULTATION DURING THE EXAMINATION, AND THEIR PRIVILEGE AGAINST SELF-INCRIMINATION.

THE EXAMINER THEN CONDUCTS AN IN-DEPTH INTERVIEW OF THE EXAMINEE ON MATTERS PERTINENT TO THE EXAMINATION, AND DETERMINES THE INDIVIDUAL'S MENTAL AND PHYSICAL FITNESS FOR EXAMINATION. IF THERE IS ANY QUESTION CONCERNING THE EXAMINEE'S FITNESS FOR EXAMINATION, THE EXAMINATION WILL BE POSTPONED PENDING EVALUATION BY COMPETENT MEDICAL OR PSYCHOLOGICAL PERSONNEL.

THE EXAMINER WILL EXPLAIN THE NATURE AND CHARACTERISTICS OF THE POLYGRAPH INSTRUMENT AND DEVELOP -- IN CONJUNCTION WITH THE EXAMINEE -- ALL RELEVANT QUESTIONS THAT ARE TO BE ASKED. SUCH QUESTIONS MUST HAVE A SPECIAL RELEVANCE TO THE SUBJECT OF THE INVESTIGATION. NO QUESTION MAY BE ASKED CONCERNING MATTERS SUCH RELIGIOUS BELIEFS/AFFILIATIONS --RACIAL MATTERS --POLITICAL BELIEFS OR AFFILIATIONS OF A NONSUBVERSIVE NATURE --OR OPINIONS REGARDING THE CONSTITUTIONALITY OF LEGISLATIVE POLICIES. I WOULD HIGHLIGHT THAT SIGNIFICANT ADMISSIONS OR CONFESSIONS ARE QUITE OFTEN OBTAINED DURING THIS PHASE OF THE EXAMINATION

THE NEXT PHASE -- OR IN-TEST PHASE, CONSISTS OF THE EXAMINEE BEING ATTACHED TO THE POLYGRAPH INSTRUMENT AND BEING ASKED TO GIVE A YES OR NO RESPONSE TO EACH OF THE PREVIOUSLY REVIEWED AND DISCUSSED QUESTIONS.

IN THE THIRD -- OR POST-TEST PHASE -- THE EXAMINER REVIEWS THE PHYSIOLOGICAL REACTIONS REFLECTED ON THE CHARTS AND MAKES A PRELIMINARY EVALUATION. IF NECESSARY, THE EXAMINER THEN QUESTIONS THE EXAMINEE REGARDING ANSWERS GIVEN TO PARTICULAR QUESTIONS. WITHIN DOD, THREE CHARTS ARE NORMALLY COLLECTED ON EACH EXAMINEE, WITH OCCASIONAL VARIATION IN THE SEQUENCE -- BUT NOT THE SUBSTANCE OF THE QUESTIONS. SIGNIFICANT ADMISSIONS OR CONFESSIONS ARE ALSO FREQUENTLY OBTAINED DURING THIS PHASE OF THE EXAMINATION.

THE EXAMINER THEN FORWARDS ALL INFORMATION AND MATERIALS CONCERNING THE EXAMINATION, TO INCLUDE AN OPINION REGARDING TRUTHFULNESS OR DECEPTION, TO A SUPERVISORY EXAMINER. IT IS ONLY AFTER THE

SUPERVISORY EXAMINER HAS MADE AN INDEPENDENT ANALYSIS OF THE POLYGRAPH CHARTS AND REVIEWED ALL ASPECTS OF THE EXAMINATION THAT AN OFFICIAL OPINION IS RENDERED REGARDING TRUTHFULNESS OR DECEPTION. I WOULD PARTICULARLY NOTE THAT THIS OPINION APPLIES ONLY TO THE OUTCOME OF THE POLYGRAPH EXAMINATION. DOD POLYGRAPH EXAMINER PERSONNEL DO NOT MAKE DECISIONS REGARDING THE FINAL OUTCOME OF INVESTIGATIVE CASES IN WHICH A POLYGRAPH EXAMINATION HAS BEEN ADMINISTERED. MOREOVER, AS A MATTER OF POLICY, THE RESULTS OF A POLYGRAPH EXAMINATION MAY BE CONSIDERED ONLY IN THE CONTEXT OF OTHER INVESTIGATIVE EFFORT AND NOT CONSIDERED CONCLUSIVE, IN THEMSELVES, OF THE MATTER UNDER INVESTIGATION. BASICALLY, NO ACTION IS TO BE TAKEN SOLELY ON AN ANALYSIS OF THE POLYGRAPH CHARTS.

THE USE OF THE POLYGRAPH BY THE FEDERAL GOVERNMENT AS AN AID IN SUPPORT OF OTHER INVESTIGATIVE TECHNIQUES SPANS A PERIOD OF MORE THAN 60 YEARS. AS EARLY AS 1917, THE BUREAU OF INVESTIGATION -- PREDECESSOR TO THE FEDERAL BUREAU OF INVESTIGATION -- WAS USING THE POLYGRAPH ON AN OCCASIONAL BASIS TO RESOLVE CRIMINAL CASES. AT ABOUT THIS SAME TIME, THE POLYGRAPH WAS FIRST USED IN A COUNTERINTELLIGENCE INVESTIGATION BY THE DEPARTMENT OF THE ARMY.

IN THE AREA OF SECURITY SCREENING, THE POLYGRAPH WAS USED IN THE EARLY 1940'S --TO SCREEN POTENTIAL EMPLOYEES AT THE OAK RIDGE ATOMIC FACILITY AND LATER, NEAR THE END OF WORLD WAR II -- TO SCREEN 274 GERMAN PRISONERS OF WAR WHO WERE BEING CONSIDERED FOR POLICE LEADERSHIP POSITIONS IN THE POST-WAR GERMAN GOVERNMENT. IN THIS LATTER INSTANCE, 110 OF THE INDIVIDUALS WERE NOT

RECOMMENDED-DUE TO ADMISSIONS OBTAINED DURING THE POLYGRAPH EXAMINATION TO MEMBERSHIP IN THE NAZI PARTY, GESTAPO SS -- OR COMMUNIST PARTY. ONE OF THE INDIVIDUAL'S IDENTIFIED AS A NAZI PARTY MEMBER PROVED TO HAVE BEEN THE PARTY TREASURER FROM 1933 TO 1938.

IN 1947, THE NEWLY FORMED CENTRAL INTELLIGENCE AGENCY BEGAN USING THE POLYGRAPH IN SUPPORT OF OPERATIONS -- FOR INVESTIGATION OF SPECIFIC ALLEGATIONS--AND FOR SCREENING OF POTENTIAL EMPLOYEES. BY 1950, CIA WAS SCREENING ALL APPLICANTS FOR EMPLOYMENT WITH THE AGENCY.

IN MAY 1951, THE ARMED FORCES SECURITY AGENCY -- PREDECESSOR TO THE NATIONAL SECURITY AGENCY, BEGAN USING THE POLYGRAPH TO EXPEDITE THE CLEARANCE PROCESSING OF MORE THAN A THOUSAND EMPLOYEES WHO HAD BEEN HIRED BUT WHOSE CLEARANCE WOULD HAVE OTHERWISE BEEN DELAYED PENDING COMPLETION OF THE BACKGROUND INVESTIGATION. BECAUSE OF THE KOREAN WAR, THOSE INVESTIGATIONS WERE TAKING AS LONG AS 18 MONTHS TO COMPLETE. BY 1953, AFSA-NSA, WAS GIVING POLYGRAPH EXAMINATIONS TO ALL APPLICANTS FOR EMPLOYMENT.

AS USE OF THE POLYGRAPH BEGAN TO EXPAND WITHIN THE FEDERAL GOVERNMENT, THE CONGRESS BEGAN TO EXAMINE ITS USE MORE CLOSELY. CONSEQUENTLY, IN 1963, THE FOREIGN OPERATIONS AND GOVERNMENT INFORMATION SUBCOMMITTEE, HOUSE GOVERNMENT OPERATIONS COMMITTEE, INITIATED EXTENSIVE HEARINGS INTO THE FEDERAL GOVERNMENT'S USE OF THE POLYGRAPH.

AS A RESULT OF THE HEARINGS, THE DEPARTMENT, WORKING CLOSELY WITH MEMBERS OF THE SUBCOMMITTEE STAFF, DEVELOPED AND ISSUED DOD DIRECTIVE 5210.48 WHICH, AT THAT TIME, WAS VIEWED AS THE FIRST COMPREHENSIVE EFFORT TO PRESCRIBE UNIFORM POLICIES AND PROCEDURES CONTROLLING USE OF THE POLYGRAPH AND SELECTION, TRAINING AND SUPERVISION OF POLYGRAPH EXAMINERS. THIS DIRECTIVE, REVISED IN 1975 -- AND MOST RECENTLY AMENDED IN 1979 --GOVERNS THE DEPARTMENT'S CURRENT USE OF THE POLYGRAPH.

UNDER CURRENT POLICY GUIDANCE, THE POLYGRAPH IS USED AS AN INVESTIGATIVE TOOL -- AND ONLY AFTER INVESTIGATION BY OTHER MEANS HAS BEEN AS THOROUGH AS CIRCUMSTANCES PERMIT AND ONLY WHEN THE INDIVIDUAL TO BE EXAMINED CONSENTS TO THE EXAMINATION. ADVERSE ACTION CANNOT BE TAKEN FOR REFUSAL TO TAKE A POLYGRAPH EXAMINATION.

ESSENTIALLY, THERE ARE 4 TYPES OF CASES IN WHICH THE POLYGRAPH MAY BE AUTHORIZED. FIRST -- TO ASSIST IN RESOLVING SERIOUS CRIMINAL CASES (THOSE INVOLVING OFFENSES PUNISHABLE BY DEATH, OR CONFINEMENT FOR ONE YEAR OR MORE.) SECOND -- COUNTERINTELLIGENCE INVESTIGATIONS (INVESTIGATIONS OF ALLEGED UNAUTHORIZED DISCLOSURES OF CLASSIFIED INFORMATION, AND ALLEGED ACTS OF ESPIONAGE, SABOTAGE OR TREASON.) THIRD -- INTELLIGENCE OPERATIONS (WHICH WOULD INVOLVE USE OF THE POLYGRAPH TO ASSIST IN DETERMINING THE RELIABILITY OF INDIVIDUALS WHO ARE -- OR WHO CLAIM TO BE -- AGENTS, SOURCES OR OPERATIVES.) AND, FOURTH -- PERSONNEL SECURITY INVESTIGATIONS FOR TWO PURPOSES: ONE, TO ASSIST IN DETERMINING THE ELIGIBILITY OF INDIVIDUALS FOR EMPLOYMENT, ASSIGNMENT OR DETAIL TO THE NATIONAL SECURITY

AGENCY AND NSA CONTRACTOR PERSONNEL FOR ACCESS TO SENSITIVE CRYPTOGRAPHIC INFORMATION; TWO, TO ASSIST IN RESOLVING DEROGATORY INFORMATION DEVELOPED DURING A PERSONNEL SECURITY INVESTIGATION OF DOD MILITARY, CIVILIAN OR CONTRACTOR EMPLOYEES, WHEN SUCH INFORMATION CAUSES DOUBT THAT ACCESS TO CLASSIFIED INFORMATION IS CLEARLY CONSISTENT WITH THE INTERESTS OF NATIONAL SECURITY, AND THE INVESTIGATION HAS REACHED AN IMPASSE.)

IN ADDITION TO THESE GENERAL CATEGORIES OF USE. THE POLYGRAPH MAY ALSO BE AUTHORIZED WHEN REQUESTED FOR THE PURPOSE OF EXCULPATION, BY THE SUBJECT OF A CRIMINAL, COUNTERINTELLIGENCE OR PERSONNEL SECURITY INVESTIGATION.

AS I INDICATED PREVIOUSLY, THE DEPARTMENT'S ORIGINAL POLYGRAPH DIRECTIVE WAS DEVELOPED IN RESPONSE TO CONGRESSIONAL AND PUBLIC CONCERN FOR SAFEGUARDS TO PREVENT MISUSE AND ABUSE. I WOULD NOW LIKE TO SUMMARIZE FOR YOU THE LIMITATIONS AND CONTROLS THAT HAVE BEEN INCORPORATED INTO OUR EXISTING DIRECTIVE.

AUTHORITY TO APPROVE POLYGRAPH EXAMINATIONS IS LIMITED TO THE SECRETARIES OF THE MILITARY DEPARTMENTS, DIRECTORS, NSA AND DIA AND MYSELF. FURTHER DELEGATIONS MUST BE REVIEWED AND APPROVED BY ME. LIMITATIONS HAVE ALSO BEEN PLACED ON WHO CAN CONDUCT POLYGRAPH EXAMINATIONS. AT THE PRESENT TIME, THE FOLLOWING ARE THE ONLY DOD ACTIVITIES AUTHORIZED TO CONDUCT POLYGRAPH EXAMINATIONS -- TO ACQUIRE OR POSSESS POLYGRAPH EQUIPMENT -- OR TO HAVE POLYGRAPH EXAMINERS:

. U.S. ARMY CRIMINAL INVESTIGATION COMMAND

. U.S. ARMY ASSISTANT CHIEF OF STAFF, INTELLIGENCE
. U.S. NAVAL INVESTIGATIVE SERVICE
. U.S. MARINE CORPS LAW ENFORCEMENT SECTION
. U.S. AIR FORCE OFFICE OF SPECIAL INVESTIGATIONS
. U.S. AIR FORCE ASSISTANT CHIEF OF STAFF, INTELLIGENCE
. NATIONAL SECURITY AGENCY

WE STRICTLY LIMIT DISSEMINATION OF THE REPORTS OF POLYGRAPH EXAMINATION.

TECHNICAL REPORTS OF POLYGRAPH EXAMINATION -- WHICH INCLUDE THE EXAMINER'S PREPARATIONS, EXAMINER'S NOTES, THE POLYGRAPH CHARTS, AND OTHER TECHNICAL DETAILS OF THE EXAMINATION -- ARE NOT RELEASABLE OUTSIDE THE AGENCY CONDUCTING THE POLYGRAPH EXAMINATION -- EXCEPT AS REQUIRED BY LAW.

THE REPORT OF RESULTS OF A POLYGRAPH EXAMINATION -- WHICH INCLUDES A SYNOPSIS OF THE EXAMINATION, THE RELEVANT QUESTIONS ASKED AND EXAMINEE'S ANSWERS, THE OPINION REGARDING TRUTH OR DECEPTION, AND ANY ADMISSIONS MADE BY THE EXAMINEE -- MAY BE MADE AVAILABLE WITHIN DOD -- TO OFFICIALS RESPONSIBLE FOR PERSONNNEL SECURITY, LAW ENFORCEMENT, AND ADMINISTRATION OF CRIMINAL JUSTICE. THE REPORT OF RESULTS MAY BE MADE AVAILABLE --OUTSIDE DOD -- TO LAW ENFORCEMENT OFFICIALS WHEN THE EXAMINATION REVEALS ALLEGED VIOLATION OF A FEDERAL OR STATE LAW -- AND, TO THE PERSON EXAMINED OR THEIR LEGAL COUNSEL, WHEN REQUESTED. IN ALL INSTANCES, AN ACCOUNTING IS MAINTAINED OF THE DISSEMINATION IN ACCORDANCE WITH THE PRIVACY ACT OF 1974.

CONTROLS HAVE ALSO BEEN ESTABLISHED ON POSSESSION AND MAINTENANCE OF POLYGRAPH INSTRUMENTS. ALL INSTRUMENTS MUST BE MAINTAINED IN SECURE STORAGE TO PREVENT DAMAGE OR MISUSE. FURTHER, RECURRENT CHECKS ARE MADE TO ENSURE THAT THE INSTRUMENTS ARE PROPERLY CALIBRATED AND THE EXAMINER IS REQUIRED TO NOTE THE SERIAL NUMBER OF THE INSTRUMENT USED AND THE DATE IT WAS LAST CALIBRATED, IN THE POLYGRAPH EXAMINATION TECHNICAL REPORT.

SINCE THE POLYGRAPH EXAMINER PLAYS SUCH AN IMPORTANT ROLE IN THE POLYGRAPH EXAMINATION PROCESS, OUR POLICY PRESCRIBES PARTICULARLY STRINGENT STANDARDS FOR THE SELECTION, TRAINING AND SUPERVISION OF POLYGRAPH EXAMINERS.

TO BE SELECTED AS A DOD POLYGRAPH EXAMINER AN INDIVIDUAL MUST BE --A U.S. CITIZEN -- 25 YEARS OF AGE -- A GRADUATE OF A 4-YEAR ACCREDITED COLLEGE OR EQUIVALENT AND HAVE TWO YEARS EXPERIENCE AS AN INVESTIGATOR -- BE THE SUBJECT OF A BACKGROUND INVESTIGATION -- AND THE SUBJECT OF A POLYGRAPH EXAMINATION. THE LATTER REQUIREMENT HAVING BEEN ESTABLISHED AS A MEANS OF ENSURING THAT AN EXAMINER FULLY REALIZES THE IMPACT OR EFFECT OF THE POLYGRAPH EXAMINATION ON INDIVIDUALS THEY MAY SUBSEQUENTLY EXAMINE. AT THE PRESENT TIME, THERE ARE APPROXIMATELY 150 CERTIFIED POLYGRAPH EXAMINERS IN DOD.

UNDER THE POLICY GUIDANCE OF MY OFFICE, THE DEPARTMENT OF THE ARMY MANAGES THE TRAINING PROGRAM FOR DOD POLYGRAPH EXAMINERS. THE COURSE OF STUDY IS 12 WEEKS AND THE CURRICULUM INCLUDES COURSES IN:

- INVESTIGATIVE TECHNIQUES

- METHODS OF INTERROGATION
- BASIC ELEMENTS OF NORMAL, ABNORMAL AND CRIMINAL PSYCHOLOGY
- CONSTITUTIONAL AND OTHER LEGAL CONCERNS
- PHYSIOLOGY
- FUNCTIONING OF THE POLYGRAPH, ITS CAPABILITIES AND LIMITATIONS
- AND, DOD POLICY ON POLYGRAPH USE

FOLLOWING COMPLETION OF THE COURSE OF INSTRUCTION EACH CANDIDATE FOR POLYGRAPH EXAMINER MUST SERVE A PROBATIONARY PERIOD OF FROM 6 MONTHS TO ONE YEAR. DURING THIS TIME THE CANDIDATE MUST CONDUCT A MINIMUM OF 25 EXAMINATIONS UNDER THE DIRECT SUPERVISION OF A CERTIFIED DOD POLYGRAPH EXAMINER. ONCE THE CANDIDATE HAS BEEN CERTIFIED, IT IS REQUIRED THAT THEY CONDUCT A MINIMUM OF 18 POLYGRAPH EXAMINATIONS SEMIANNUALLY TO MAINTAIN THEIR PROFICIENCY AND, THAT THEY RECEIVE REFRESHER TRAINING AT LEAST ONCE EVERY TWO YEARS. TO HIGHLIGHT THE QUALITY OF OUR TRAINING, IT IS POINTED OUT THAT A NUMBER OF OTHER FEDERAL AGENCIES -- TO INCUDE THE FBI AND THE U.S. SECRET SERVICE -- TRAIN THEIR EXAMINERS AT THE DOD POLYGRAPH SCHOOL.

AS PREVIOUSLY STATED, THE ROLE OF THE SUPERVISORY EXAMINER IS AN ESSENTIAL ELEMENT OF THE DEPARTMENT'S SUCCESS IN MAINTAINING QUALITY CONTROL OF POLYGRAPH EXAMINATIONS.

ON THE BASIS OF THIS HISTORICAL PERSPECTIVE, WE CAN NOW PROCEED TO ADDRESS -- IN A MORE MEANINGFUL WAY -- WHY THE DEPARTMENT IS CONSIDERING CHANGING ITS POLYGRAPH POLICY -- OUR POSITION WITH RESPECT TO THE VALIDITY AND UTILITY OF THE

POLYGRAPH -- AND DETAILS OF THE CHANGES THAT ARE BEING CONSIDERED.

ONE POINT ON WHICH THERE IS NO DISAGREEMENT IS THAT THERE IS CERTAIN INFORMATION IN THE FEDERAL GOVERNMENT THAT REQUIRES PROTECTION IN THE INTERESTS OF MAINTAINING THE SECURITY AND INTEGRITY OF OUR COUNTRY. THERE IS ALSO A CONSENSUS THAT THIS INFORMATION FALLS INTO DIFFERENT CATEGORIES OF SENSITIVITY AND THAT THE MOST SENSITIVE INFORMATION IS THAT WHICH INCLUDES CRYPTOGRAPHIC SYSTEMS, CERTAIN RESEARCH AND DEVELOPMENT PROJECTS, AND INTELLIGENCE SOURCES AND METHODS.

BASICALLY, THERE IS A THREE-PRONGED APPROACH TO PROVIDING SECURITY FOR CLASSIFIED INFORMATION -- PHYSICAL SECURITY (SAFES, GUARDS, ALARMS, ETC) -- INFORMATION SECURITY (CLASSIFICATION, ACCOUNTABILITY AND RESTRICTION ON DISSEMINATION AND REPRODUCTION) -- AND -- PERSONNEL SECURITY.

HISTORICALLY, THE GOAL OF PERSONNEL SECURITY IS TO DETERMINE THE TRUSTWORTHINESS OF INDIVIDUALS --PRIOR TO THEIR BEING GRANTED ACCESS TO CLASSIFIED INFORMATION OR ASSIGNMENT TO PARTICULARLY SENSITIVE DUTIES-- AND ON A CONTINUING BASIS THEREAFTER. IT IS EVIDENT THAT INSTALLATION OF THE MOST COMPREHENSIVE AND SOPHISTICATED PHYSICAL AND INFORMATION SECURITY SYSTEMS ARE TO NO AVAIL, IF THE CLEARED AND TRUSTED EMPLOYEE ELECTS TO COMPROMISE OUR SENSITIVE INFORMATION TO OUR ADVERSARIES. THUS, PEOPLE ARE CENTRAL TO THE SECURITY ISSUE.

TRADITIONALLY, THE KEYSTONE TO PERSONNEL SECURITY HAS BEEN THE PERSONNEL SECURITY FIELD INVESTIGATION, WITH THE NATURE AND EXTENT

OF THIS INVESTIGATION DEPENDING UPON THE LEVEL OF SENSITIVITY OF THE INFORMATION INVOLVED. ESSENTIALLY, SUCH INVESTIGATION WOULD INCLUDE -- CHECKS OF LOCAL AND NATIONAL LAW ENFORCEMENT AGENCIES -- EMPLOYMENT --CREDIT REFERENCES -- AND INTERVIEWS WITH FRIENDS, NEIGHBORS, CO-WORKERS, AND OTHER PERSONS WHO ARE IN A POSITION TO COMMENT ON THE INDIVIDUAL'S RELIABILITY AND TRUSTWORTHINESS.

HOWEVER, COMMENCING IN THE MID-1970s, A NUMBER OF EVENTS TOOK PLACE WHICH SERIOUSLY ERODED DOD PERSONNEL SECURITY INVESTIGATIONS. THESE EVENTS INCLUDED: A CONGRESSIONALLY DIRECTED REDUCTION IN DOD INVESTIGATIVE RESOURCES-- THE ADVERSE IMPACT OF THE PRIVACY ACT OF 1974 ON THE WILLINGNESS OF PERSONS OR ORGANIZATIONS TO PROVIDE RELEVANT INFORMATION -- LIMITATIONS PLACED ON ACCESSIBILITY OF SCHOOL RECORDS -- AND, ISSUANCE OF JUSTICE DEPARTMENT REGULATIONS THAT CAUSED MANY LOCAL JURISDICTIONS TO SEVERELY LIMIT ACCESS TO LAW ENFORCEMENT RECORDS.

THE CONSEQUENCE OF THESE EVENTS WAS: A SERIOUS DEGRADATION IN OUR ABILITY TO CONDUCT PERSONNEL SECURITY INVESTIGATIONS -- LESS RELEVANT INFORMATION BEING AVAILABLE -- AND, A SIGNIFICANTLY LESS VALID INVESTIGATIVE PRODUCT.

THIS SITUATION-- WHILE IN ITSELF A MATTER OF SERIOUS CONCERN--WAS FURTHER COMPLICATED BY ANOTHER, MORE THREATENING TURN OF EVENTS -- ESPIONAGE WAS ON THE UPSWING. AS PRIMARY EXAMPLES, CONSIDER THAT THE CASES OF BOYCE & LEE, KAMPILES, LT COOK, CWO HELMICH AND WILLIAM HOLDEN BELL. ALL WERE UNCOVERED IN THE PERIOD BETWEEN

THE LATE 1970s AND END OF 1983. THESE CASES INVOLVED THE COMPROMISE TO OUR ADVERSARIES OF INFORMATION RANGING FROM THE MOST SECRET RESEARCH AND DEVELOPMENT MATERIAL TO TOP SECRET COMPARTMENTED INTELLIGENCE INFORMATION.

THUS, IT BECAME CLEAR THAT SPECIAL EFFORTS HAD TO BE TAKEN TO PROTECT OUR MOST SENSITIVE RESOURCES VITAL TO THE MAINTENANCE OF NATIONAL SECURITY.

IN LIGHT OF THIS CRITICAL SITUATION, IN 1982 I APPOINTED A SELECT PANEL, COMPOSED OF SENIOR DEFENSE OFFICIALS, WHO WERE CHARGED WITH REVIEWING THE DEPARTMENT'S PERSONNEL SECURITY PROGRAM FROM TOP TO BOTTOM AND DEVELOPING RECOMMENDATIONS FOR RESOLUTION OF THE PROBLEM. THE PANEL WAS CHAIRED BY MR. DAVID O. COOKE, THE DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR ADMINISTRATION., AND WAS COMPOSED OF:

- THE NAVY GENERAL COUNSEL
- THE ARMY DIRECTOR OF THE GENERAL STAFF
- THE AIR FORCE DEPUTY ASSISTANT SECRETARY FOR LOGISITICS
- THE DEPUTY DIRECTOR, NSA
- THE CHIEF OF STAFF, DEFENSE INTELLIGENCE AGENCY

AMONG THE GENERAL RECOMMENDATIONS MADE BY THE PANEL WERE RECOMMENDATIONS FOR TIGHTENING CONTROLS ON THE ISSUANCE OF CLEARANCES, IMPROVED ADJUDICATION OF SECURITY CASES, AND REINSTITUTION OF THE REGULAR REINVESTIGATION OF CLEARED INDIVIDUALS. THE DEPARTMENT HAS TAKEN ACTION IN ALL THESE AREAS TO IMPROVE SECURITY.

OF PARTICULAR IMPORTANCE, THE PANEL RECOMMENDED A COUNTERINTELLIGENCE SCOPE POLYGRAPH EXAMINATION TO ASSIST IN DETERMINING THE INITIAL AND CONTINUED ELIGIBILITY OF A LIMITED NUMBER OF INDIVIDUALS IN POSITIONS THAT REQUIRE ACCESS TO EXTREMELY SENSITIVE CLASSIFIED INFORMATION.

BY COUNTERINTELLIGENCE SCOPE, WE MEAN THAT NO QUESTIONS SHALL BE ASKED CONCERNING THE INDIVIDUAL'S LIFESTYLE-- THAT IS, NO QUESTIONS CONCERNING THEIR SEXUAL PREFERENCE, ALCOHOL USE, CREDIT SITUATION, OR SIMILAR AREAS OF PERSONAL CONDUCT. ON THE CONTRARY, QUESTIONS ASKED DURING THESE EXAMINATIONS WILL BE STRICTLY LIMITED TO THOSE NECESSARY TO DETERMINE WHETHER THE INDIVIDUAL HAS:

- EVER ENGAGED IN ESPIONAGE OR SABOTAGE AGAINST THE UNITED STATES OR KNOWS ANYONE WHO HAS.
- EVER HAD ANY UNAUTHORIZED CONTACT WITH REPRESENTATIVES OF A FOREIGN GOVERNMENT.
- EVER BEEN APPROACHED TO GIVE OR SELL -- OR EVER GIVEN OR SOLD CLASSIFIED MATERIALS TO UNAUTHORIZED PERSONS -- OR KNOW ANYONE WHO HAS.

IT WAS IN THIS CONTEXT, THEN, THAT THE DEPARTMENT DEVELOPED A PROPOSED REVISION OF ITS POLYGRAPH POLICY -- TO SUPPLEMENT OUR INVESTIGATIVE PROGRAM -- TO DETER AND DETECT ESPIONAGE. I WILL DETAIL THE SPECIFIC CHANGES SHORTLY -- BUT FIRST, WANT TO COMMENT BRIEFLY ON OUR GENERAL PHILOSOPHY CONCERNING USE OF THE POLYGRAPH AS SUPPORTED BY OUR EXTENSIVE FIELD EXPERIENCE WITH THIS UNIQUE INVESTIGATIVE TOOL.

WE RECOGNIZE THAT THE POLYGRAPH IS NOT INFALLIBLE. WE ARE AWARE OF THE VARYING CLAIMS OF THE RESEARCH DONE TO DATE REGARDING THE ACCURACY OF THE POLYGRAPH INSTRUMENT WITH CLAIMS RANGING FROM --

NO BETTER THAN TOSS OF A COIN -- TO UPWARDS OF 97% ACCURACY,. ALTHOUGH OUR ASSESSMENT SHOWS IT TO FALL IN THE HIGHER RANGE.

WE ARE AWARE THAT THE OFFICE OF TECHNOLOGY ASSESSMENT (OTA) RECENTLY CONDUCTED A REVIEW OF THE SCIENTIFIC LITERATURE AVAILABLE CONCERNING THE VALIDITY AND ACCURACY OF THE POLYGRAPH, WHICH IS CRITICAL OF THE METHODOLOGY AND RESULTS OF THE RESEARCH THAT HAS BEEN CONDUCTED IN THIS AREA. THE DEPARTMENT OF DEFENSE ADVISED OTA THAT WE BELIEVE THE REPORT IS INACCURATE OR INCOMPLETE IN ITS ANALYSIS OF THE STUDIES AND RESEARCH THAT HAVE BEEN CONDUCTED. IN SOME INSTANCES CONCLUSIONS ARE ASSERTED WITHOUT ANY SUPPORTING EVIDENCE AND WE BELIEVE THOSE CONCLUSIONS TO BE IN ERROR. IN OTHER INSTANCES, IDENTICAL DATA IS USED TO SUBSTANTIATE DIFFERENT AND OFTEN CONTRADICTORY CONCLUSIONS, AND FINALLY, DOD POLYGRAPH PROCEDURES AND TECHNIQUES ARE INACCURATELY DESCRIBED, AND DOD'S PROPOSED POLYGRAPH USE, INACCURATELY PORTRAYED.

THE BOTTOM LINE IS THIS, AS THE RESULT OF EXTENSIVE EXPERIENCE IN CIA, NSA AND DOD, WE ARE CONVINCED THE POLYGRAPH PROCESS WORKS. THE DEPARTMENT HAS DEVELOPED A REPORT --COPIES OF WHICH I HAVE MADE AVAILABLE TO YOU-- WHICH WE BELIEVE DEMONSTRATES THE UTILITY OF THE POLYGRAPH. SOME OF THE MORE INTERESTING HIGHLIGHTS OF THIS STUDY ARE THAT: WITHOUT THE POLYGRAPH AS AN INVESTIGATIVE TOOL, A NUMBER OF ESPIONAGE CASES WOULD NEVER HAVE BEEN SOLVED; THERE HAS BEEN MORE RESEARCH CONDUCTED ON THE DETECTION OF DECEPTION IN THE LAST SIX YEARS THAN IN THE PREVIOUS SIXTY YEARS; AND, THERE IS NO DATA SUGGESTING THAT THE VARIOUS POLYGRAPH TECHNIQUES

AND APPLICATIONS AT DOD HAVE HIGH FALSE POSITIVE OR HIGH FALSE NEGATIVE ERROR RATES.

OF GREATER SIGNIFICANCE , IT IS FELT THAT THE PRECISE ACCURACY OF THE POLYGRAPH PROCEDURE WOULD ASSUME OVERIDING IMPORTANCE ONLY IF WE INTENDED TO RELY EXCLUSIVELY ON AN ANALYSIS OF POLYGRAPH CHARTS AS A BASIS FOR MAKING DECISIONS -- BUT WE DO NOT. THERE IS NO CHANGE BEING CONSIDERED TO THE DEPARTMENT'S BASIC POLICY THAT THE POLYGRAPH IS TO BE USED ONLY AS AN AID IN SUPPORT OF OTHER INVESTIGATIVE TECHNIQUES. AGAIN, WITH RESPECT TO ACCURACY, IT SHOULD BE RECOGNIZED THAT OTHER INVESTIGATIVE TECHNIQUES SUCH AS BACKGROUND INVESTIGATIONS, SPECIFICALLY, OBTAINING INFORMATION FROM WITNESSES SUCH AS NEIGHBORS, CO-WORKERS, AND CREDIT REFERENCES, MUST ALSO ADMIT TO SOME POTENTIAL FOR ERROR. IT HAS NOT BEEN SUGGESTED THAT SUCH TECHNIQUES BE IGNORED OR BANNED. ON THE CONTRARY, THE ANSWER HAS BEEN TO FORMULATE CONTROLS ON THESE TECHNIQUES TO BOTH PREVENT ABUSE AND MINIMIZE THE POSSIBILITY OF ERROR. WE BELIEVE THIS APPROACH IS ALSO THE PROPER ONE TO TAKE WITH RESPECT TO USE OF THE POLYGRAPH AND THAT SUCH CONTROLS ARE EVIDENT IN BOTH OUR CURRENT AND PROPOSED POLYGRAPH POLICY DOCUMENTS.

WITH RESPECT TO THE VALUE OF THE POLYGRAPH AS AN AID IN INVESTIGATION, I WOULD NOW LIKE TO PROVIDE YOU A FEW EXAMPLES OF THE DEMONSTRATED UTILITY OF THE POLYGRAPH.

IN THE AREA OF CRIMINAL INVESTIGATIONS, THE DEPARTMENT OF THE ARMY -- THE GREATEST USER OF THE POLYGRAPH FOR LAW ENFORCEMENT

PURPOSES IN THE FEDERAL GOVERNMENT -- LAST YEAR USED THE POLYGRAPH IN APPROXIMATELY 20% OF ITS INVESTIGATIONS OF FELONY CRIMES AND ABOUT 95% OF ITS CRIMINAL INVESTIGATIONS FOR WHICH THE MAXIMUM PENALTY IS 15 YEARS OR MORE. AS A RESULT, THE ARMY SOLVED 65% OF THEIR FELONIES WHILE THE NATIONAL AVERAGE FOR THE SAME PERIOD WAS ONLY ABOUT 20%.

ANOTHER EXAMPLE IN THE CRIMINAL AREA -- A RECENT REVIEW OF DOD STATISTICAL DATA CONCERNING USE OF THE POLYGRAPH IN CRIMINAL INVESTIGATIONS DURING 1982 REFLECTS THAT IN AN AVERAGE OF 10% OF THESE INVESTIGATIONS, ADMISSIONS OR CONFESSIONS WERE OBTAINED FROM THE SUBJECT DURING THE PRE-TEST INTERVIEW AND THAT ADMISSIONS OR CONFESSIONS WERE MADE IN APPROXIMATELY 40% OF ALL CASES WHERE DECEPTION WAS INDICATED, DURING THE POST-TEST PHASE OF THE EXAMINATION. BEAR IN MIND, WE ARE NOT TALKING ABOUT THE MECHANICAL CHARTING OF PHYSIOLOGICAL REACTIONS -- BUT ACTUAL RELEVANT ADMISSIONS OR CONFESSIONS OBTAINED FROM THE SUBJECT HIMSELF THROUGH THE SKILLED INTERVIEWING OF THE PROFESSIONAL POLYGRAPH EXAMINER.

IN THE PERSONNEL SECURITY AREA -- EXPERIENCE WITH THE POLYGRAPH IN NSA, CIA AND DOD HAS DEMONSTRATED THE HIGH UTILITY OF THE POLYGRAPH IN IDENTIFYING APPLICANTS WHO WERE CLEARLY UNSUITABLE FOR ASSIGNMENT TO THOSE SENSITIVE AGENCIES. THE POLYGRAPH WAS INSTRUMENTAL IN PREVENTING THE EMPLOYMENT OF INDIVIDUALS WHO ADMITTED THEY HAD BEEN SENT BY HOSTILE INTELLIGENCE TO PENETRATE NSA AS WELL AS PERSONS WHO WERE OTHERWISE COLLABORATING WITH

HOSTILE INTELLIGENCE. CONSIDER THE FOLLOWING NSA CASES:

> AN APPLICANT FOR EMPLOYMENT WITH NSA REACTED TO QUESTIONS ON THE POLYGRAPH EXAMINATION CONCERNING ESPIONAGE, CLANDESTINE CONTACTS, AND RELATED QUESTIONS. HE ADMITTED THAT IF EMPLOYED, HE WOULD SELL CLASSIFIED INFORMATION TO A FOREIGN INTELLIGENCE SERVICE IF HE COULD GET ENOUGH MONEY FOR THE INFORMATION TO ENSURE THAT HE COULD LIVE COMFORTABLY.
>
> AN APPLICANT FOR EMPLOYMENT WHO WAS ABOUT TO RETIRE FROM MILITARY SERVICE REACTED TO QUESTIONS ABOUT INTENDING TO COMMIT ESPIONAGE AGAINST THE UNITED STATES. THE APPLICANT THEN DESCRIBED SEVERAL VISITS TO THE SOVIET EMBASSY TO MAKE ARRANGEMENTS TO DEFECT TO THE SOVIET UNION.
>
> AN ARMY SERGEANT WHO HAD ACCESS TO CRYPTOLOGIC INFORMATION APPLIED FOR A CIVILIAN POSITION. DURING THE POLYGRAPH EXAMINATION, HE REACTED TO VARIOUS RELEVANT QUESTIONS. IN THE POST-TEST INTERVIEW, HE ADMITTED TO VARIOUS PETTY CRIMES AND MISCELLANEOUS WRONGDOING. THE POLYGRAPH EXAMINER NOTED CONTINUED SPECIFIC REACTIONS TO RELEVANT QUESTIONS AND WHEN THE SERGEANT WAS REEXAMINED SEVERAL WEEKS LATER, THE SAME SITUATION CONTINUED. HIS ACCESS WAS WITHDRAWN AND AN INVESTIGATION OPENED. WHILE THAT INVESTIGATION WAS STILL IN PROGRESS, HE WAS FOUND DEAD IN HIS AUTOMOBILE. IT WAS SUBSEQUENTLY DETERMINED THAT HE HAD BEEN ENGAGED IN ESPIONAGE ON BEHALF OF THE SOVIET UNION AND HAD COMPROMISED EXTREMELY SENSITIVE INFORMATION.
>
> AN APPLICANT FOR EMPLOYMENT WHO HAD LIVED ABROAD FOR SEVERAL YEARS ADMITTED THAT SHE WAS CULTIVATED FOR SEVERAL MONTHS BY THE HOST COUNTRY INTELLIGENCE AGENCY AND FINALLY OFFERED A POSITION IN WHICH SHE WAS TO TRAVEL TO ANOTHER COUNTRY UNDER A FALSE IDENTITY, BUT AS A U.S. CITIZEN, THEN OBTAIN EMPLOYMENT IN THE TARGET COUNTRY (NOT THE U.S.). SHE SAID THAT AFTER TWO DAYS OF THOUGHTFUL DELIBERATION, SHE DECLINED. SHE HAD NOT PREVIOUSLY REPORTED THIS TO U.S. AUTHORITIES, AND DID SO DURING THE POLYGRAPH TEST ONLY AFTER REACTING TO COUNTERINTELLIGENCE QUESTIONS.

THESE ARE BUT A FEW EXAMPLES, MANY MORE ARE AVAILABLE.

FURTHER, LET US CONSIDER INFORMATION DEVELOPED BY NSA DURING SCREENING EXAMINATIONS OF MILITARY PERSONNEL WHO HAVE BEEN CLEARED FOR ACCESS TO CLASSIFIED INFORMATION ON THE BASIS OF A PERSONNEL SECURITY INVESTIGATION -- BUT NOT SUBJECT TO A POLYGRAPH EXAMINATION -- WHO SUBSEQUENTLY APPLY FOR A POSITION WHERE A POLYGRAPH EXAMINATION IS REQUIRED. A STUDY DONE BY NSA IN 1981 OF 318 SUCH APPLICANTS FOR CIVILIAN POSITIONS WITH THAT AGENCY REFLECTS THAT -- 12% ADMITTED TO ENGAGING IN MISDEMEANOR CRIMES -- 4% ADMITTED TO FELONY CRIMES -- AND 4% ADMITTED USING COCAINE OR HEROIN. IN ALL THESE INSTANCES, THE INFORMATION HAD PREVIOUSLY GONE UNDETECTED.

SIMILARLY, IN 1982, THE DEPARTMENT OF THE ARMY REVIEWED 113 CASES IN WHICH INDIVIDUALS UNDERWENT POLYGRAPH EXAMINATION TO RESOLVE INFORMATION THAT HAD BEEN DEVELOPED IN THE COURSE OF A PERSONNEL SECURITY INVESTIGATION. UP TO THAT POINT IT WAS NOT POSSIBLE TO DEVELOP ADDITIONAL LEADS THROUGH FIELD INVESTIGATION.

81 OF THE 113 INDIVIDUALS EXAMINED -- OR 72%-- INDICATED DECEPTION ON THE POLYGRAPH EXAMINATION. ADMISSIONS WERE OBTAINED IN 71 OR 88% OF THESE DECEPTION INDICATED CASES, WITH 20% OF THE ADMISSIONS INVOLVING UNREPORTED APPROACHES BY HOSTILE INTELLIGENCE --ATTEMPTS TO COMPROMISE CLASSIFIED INFORMATION --OR FOREIGN CONNECTIONS BARRING ACCESS. ANOTHER 49% INVOLVED DRUG USE AND 31% INVOLVED OTHER CRIMINAL ACTIVITY.

AND NOW, TO THE CHANGES THE DEPARTMENT IS CONSIDERING TO ITS POLYGRAPH POLICY. AS YOU WILL RECALL, THERE ARE ESSENTIALLY

4 TYPES OF CASES IN WHICH THE POLYGRAPH MAY BE CURRENTLY UTILIZED -- CRIMINAL, COUNTERINTELLIGENCE, INTELLIGENCE OPERATIONS, AND PERSONNEL SECURITY CASES.

FOLLOWING THE RECOMMENDATION OF THE SELECT PANEL, THE DEPARTMENT PROPOSED TO EXPAND ITS USE OF THE POLYGRAPH IN THE PERSONNEL SECURITY ARENA TO INCLUDE:

> REQUIRING POLYGRAPH EXAMINATION OF MILITARY PERSONNEL ASSIGNED TO NSA. AT PRESENT, WHILE ALL CIVILIAN AND CONTRACTOR PERSONNEL AT NSA ARE REQUIRED TO UNDERGO A POLYGRAPH EXAMINATION, THE ONLY MILITARY PERSONNEL ASSIGNED TO NSA WHO ARE CURRENTLY EXAMINED ARE THOSE WHO ARE BEING CONSIDERED FOR CERTAIN HIGHLY COMPARTMENTED POSITIONS AFTER ALREADY SERVING THERE.
>
> POLYGRAPH EXAMINATION OF PERSONNEL IN POSITIONS DESIGNATED BY THE DIRECTOR OF THE DEFENSE INTELLIGENCE AGENCY AS CRITICAL INTELLIGENCE POSITIONS.
>
> ASSIST IN DETERMINING THE INITIAL ELIGIBILITY OF DOD CIVILIAN, MILITARY, AND CONTRACTOR PERSONNEL FOR ACCESS TO INFORMATION PROTECTED WITHIN "SPECIAL ACCESS PROGRAMS," ESTABLISHED PURSUANT TO EO 12356 AND DEPARTMENTAL DIRECTIVES, AND, TO DETERMINE, ON A RANDOM BASIS, THE CONTINUED ELIGIBILITY OF THOSE PREVIOUSLY GIVEN ACCESS TO SUCH INFORMATION; PROVIDED, THAT USE OF THE POLYGRAPH IN ANY SUCH PROGRAM SHALL BE APPROVED BY THE DUSD(P), BASED UPON A FINDING THAT USE OF THE POLYGRAPH IS WARRANTED DUE TO THE EXTRAORDINARY RISK TO THE NATIONAL SECURITY IF THE INFORMATION TO BE PROTECTED WERE COMPROMISED. REQUESTS FOR DUSD(P) APPROVAL MUST COME FROM THE HEAD OF THE DOD COMPONENT WHO CREATED THE SPECIAL ACCESS PROGRAM CONCERNED.
>
> ASSIST IN DETERMINING ELIGIBILITY OF DOD CIVILIAN, MILITARY AND CONTRACTOR PERSONNEL FOR INTERIM ACCESS TO SENSITIVE COMPARTMENTED INFORMATION, PRIOR TO COMPLETION OF THE BACKGROUND INVESTIGATION.

ALL OF THESE WOULD BE LIMITED TO COUNTERINTELLIGENCE SCOPE POLYGRAPH EXAMINATION; THE FIRST THREE WOULD PROVIDE FOR INITIAL AND APERIODIC EXAMINATION. QUESTIONS WILL NOT BE ASKED DURING THESE EXAMINATIONS CONCERNING THE INDIVIDUAL'S

LIFE STYLE BUT RATHER WHETHER THEY ARE, OR KNOW ANYONE WHO IS, INVOLVED IN ESPIONAGE, SABOTAGE, OR UNAUTHORIZED CONTACT WITH REPRESENTATIVES OF A FOREIGN GOVERNMENT.

IN COMPARISON TO THE LARGE NUMBER OF DOD PERSONNEL ACCESSING CLASSIFIED INFORMATION, WE WOULD APPLY THE PROPOSED POLICY TO A VERY LIMITED NUMBER OF PEOPLE. IT IS ESTIMATED THAT LESS THAN 1% OF THE TOTAL NUMBER OF DOD CIVILIAN, MILITARY AND CONTRACTOR PERSONNEL EMPLOYED BY DOD WOULD BE AFFECTED BY THE PROPOSED CHANGES. FURTHER, THE DEPARTMENT'S APPROACH IN THIS MATTER IS NOT TO POLYGRAPH EACH AND EVERY INDIVIDUAL ON A RECURRRENT BASIS. RATHER, IT IS ANTICIPATED THAT SELECTION OF A LIMITED NUMBER OF THESE PERSONNEL ON A STRICTLY RANDOM BASIS WILL BE SUFFICIENT TO ACHIEVE A DETERRENT EFFECT.

THE VALUE OF THE POTENTIAL OF POLYGRAPH EXAMINATION AS A DETERRENT IS ILLUSTRATED BY THE FACT THAT IN A NUMBER OF THE ESPIONAGE CASES UNCOVERED IN RECENT YEARS, THE SUBJECTS OF THESE CASES INDICATED THAT THEY HAD SPECIFICALLY REFUSED DIRECTION FROM HOSTILE INTELLIGENCE TO PURSUE EMPLOYMENT OR ASSIGNMENT TO ACTIVITIES WHERE THEY KNEW THAT THEY WOULD BE REQUIRED TO UNDERGO A POLYGRAPH EXAMINATION.

AS PREVIOUSLY INDICATED, WE RECOGNIZE THAT THE POLYGRAPH IS NOT INFALLIBLE, AND, THEREFORE, OUR POLICY WITH RESPECT TO ADVERSE ACTION BASED ON ANALYSIS OF POLYGRAPH CHARTS IS AS FOLLOWS:

- WHEN DECEPTION IS INDICATED BY THE EXAMINER'S INTERPRETATION OF THE POLYGRAPH CHARTS, IN-DEPTH INTERVIEW OF

THE SUBJECT WILL BE UNDERTAKEN BY THE EXAMINER, IMMEDIATELY FOLLOWING THE RUNNING OF THE CHART, TO RESOLVE THE INDICATION(S) OF DECEPTION.

- WHEN THE INDICATED DECEPTION IS NOT RESOLVED WITH THE SUBJECT EITHER THROUGH FURTHER INTERVIEW OR ADDITIONAL CHARTS AT THE TIME OF THE INITIAL POLYGRAPH EXAMINATION, THE SUBJECT WILL BE SO ADVISED AND THE RESULTS OF THE EXAMINATION FORWARDED TO THE REQUESTING AGENCY.

- WHEN THE REQUESTING AGENCY, AFTER REVIEWING THE POLYGRAPH EXAMINATION RESULTS, DETERMINES THAT THEY RAISE SIGNIFICANT QUESTIONS RELEVANT TO THE SUBJECT'S CLEARANCE/ACCESS STATUS, THE SUBJECT WILL BE GIVEN THE OPPORTUNITY TO UNDERGO ADDITIONAL EXAMINATIONS BY THE EXAMINING AGENCY, USING THE SAME OR A DIFFERENT EXAMINER.

- WHEN THE SUBJECT ELECTS TO TAKE A SECOND EXAMINATION AND THE RESULTS CONTINUE TO INDICATE DECEPTION, OR WHEN THE SUBJECT OF AN INITIAL EXAMINATION RESULTING IN INDICATED DECEPTION RAISING SIGNIFICANT QUESTION RELEVANT TO THE SUBJECT'S CLEARANCE/ACCESS STATUS DOES NOT ELECT TO BE REEXAMINED, COMPREHENSIVE INVESTIATION OF THE SUBJECT SHALL BE UNDERTAKEN TO RESOLVE THE INDICATED DECEPTION UTILIZING THE RESULTS OF THE POLYGRAPH EXAMINATION AS AN INVESTIGATIVE LEAD.

- WHEN THE COMPREHENSIVE INVESTIGATION HAS BEEN COMPLETED AND NO DEROGATORY INFORMATION HAS OTHERWISE BEEN DEVELOPED RELEVANT TO THE SUBJECT'S CLEARANCE/ACCESS STATUS, ADVERSE ACTION MAY NOT BE TAKEN AGAINST THE SUBJECT OF THE POLYGRAPH EXAMINATION. EXCEPTION TO THIS PROVISION MUST BE PERSONALLY APPROVED BY THE SECRETARIES OF THE MILITARY DEPARTMENTS; DIRECTOR, NATIONAL SECURITY AGENCY; OR IN THE CASE OF OTHER DOD COMPONENTS, THE SECRETARY OR DEPUTY SECRETARY OF DEFENSE.

THE QUESTION IS ASKED "WHAT WILL HAPPEN IF THE INDIVIDUAL REFUSES TO TAKE THE EXAMINATION?" OUR PROPOSED POLICY CONCERNING REFUSALS IS AS FOLLOWS:

- WHEN A POLYGRAPH EXAMINATION HAS BEEN ESTABLISHED AS A REQUIREMENT FOR ACCESS TO CLASSIFIED INFORMATION --IN DESIGNATED SPECIAL ACCESS PROGRAMS -- INDIVIDUALS WHO REFUSE TO TAKE SUCH AN EXAMINATION MAY BE DENIED ACCESS TO THE CLASSIFIED INFORMATION IN QUESTION, PROVIDED, HOWEVER, THAT THE DOD COMPONENT CONCERNED SHALL ENSURE THAT THE INDIVIDUAL IS RETAINED IN A POSITION OF EQUAL GRADE AND PAY THAT DOES NOT REQUIRE SUCH ACCESS OR SHALL ARRANGE LIKE EMPLOYMENT AT ANOTHER DOD COMPONENT.

- WHEN A POLYGRAPH EXAMINATION HAS BEEN ESTABLISHED AS A CONDITION FOR SELECTION OR ASSIGNMENT TO A POSITION WITHIN THE DEPARTMENT OF DEFENSE --I.E., INITIAL OR CONTINUED EMPLOYMENT, ASSIGNMENT OR DETAIL TO NSA, ASSIGNMENT OR DETAIL TO CIA, AND CRITICAL INTELLIGENCE POSITIONS IN DIA -APPLICANTS AND/OR NOMINEES WHO REFUSE TO TAKE SUCH AN EXAMINATION MAY BE NON-SELECTED OR NON-ASSIGNED.

TERMINATING THE EMPLOYMENT OF AN EMPLOYEE, OTHER THAN AT NSA, OR DISCHARGE OF A MEMBER OF THE MILITARY, ARE NOT CONSEQUENCES THAT MAY BE EMPLOYED AS A RESULT OF REFUSAL TO TAKE A POLYGRAPH EXAMINATION.

FINALLY, THERE IS THE MATTER OF PROTECTION OF THE RIGHTS OF THE INDIVIDUAL AND THE CONCERN THAT HAS BEEN EXPRESSED THAT THESE CHANGES WILL HAVE AN ADVERSE EFFECT ON EMPLOYEE MORALE. DURING MY TESTIMONY, I HAVE DETAILED MANY OF THE SAFEGUARDS THAT HAVE BEEN OR ARE PROPOSED TO BE ADOPTED TO PROTECT THE RIGHTS OF THE INDIVIDUAL. HOWEVER, IN THE INTEREST OF CLARITY AND ACCURACY, I BELIEVE IT WOULD BE WORTHWHILE TO BRIEFLY STATE EACH OF THESE SAFEGUARDS AT THIS TIME:

- INDIVIDUALS MUST BE GIVEN TIMELY NOTIFICATION OF THE DATE, TIME AND PLACE OF THE POLYGRAPH EXAMINATION.
- INDIVIDUALS MUST BE ADVISED OF THEIR RIGHT TO OBTAIN AND CONSULT WITH LEGAL COUNSEL AND TO HAVE LEGAL COUNSEL AVAILABLE FOR CONSULTATION DURING THE POLYGRAPH EXAMINATION.
- INDIVIDUALS MUST BE ADVISED OF THEIR PRIVILEGE AGAINST SELF-INCRIMINATION.
- EXAMINEE MAY, UPON HIS OR HER OWN VOLITION OR UPON ADVICE OF LEGAL COUNSEL, TERMINATE THE POLYGRAPH EXAMINATION AT ANY TIME.
- NO RELEVANT QUESTIONS MAY BE ASKED DURING THE EXAMINATION THAT HAVE NOT BEEN REVIEWED WITH THE EXAMINEE PRIOR TO THE EXAMINATION.
- ALL QUESTIONS ASKED CONCERNING THE MATTER AT ISSUE MUST HAVE A SPECIAL RELEVANCE TO THE SUBJECT OF THE INQUIRY.

PROBING OF A PERSON'S THOUGHTS OR BELIEFS AND QUESTIONS ABOUT CONDUCT WHICH HAVE NO SECURITY IMPLICATION OR ARE NOT DIRECTLY RELEVANT TO AN INVESTIGATION ARE PROHIBITED (E.G., RELIGION, RACIAL MATTERS, POLITICAL BELIEFS AND AFFILIATIONS.

. TECHNICAL QUESTIONS NECESSARY TO THE POLYGRAPH TECHNIQUE MUST BE CONSTRUCTED TO AVOID EMBARASSING, DEGRADING OR UNNECESSARILY INTRUSIVE QUESTIONS.

. RELEVANT QUESTIONS ASKED DURING POLYGRAPH EXAMINATIONS ADMINISTERED FOR THE PURPOSE OF ASSISTING IN DETERMINING ELIGIBILITY FOR INITIAL OR CONTINUED ACCESS TO CLASSIFIED INFORMATION MUST BE LIMITED TO PRESCRIBED COUNTER-INTELLIGENCE TOPICS.

. RESULTS OF AN ANALYSIS OF POLYGRAPH CHARTS MUST BE CONSIDERED IN THE CONTEXT OF OTHER INVESTIGATIVE EFFORT, AND NOT AS CONCLUSIVE IN THEMSELVES, OF THE MATTER UNDER INVESTIGATION.

. WHEN A POLYGRAPH EXAMINATION RESULTS IN A FINDING OF DECEPTION INDICATED, THE EXAMINEE HAS THE RIGHT TO REQUEST A SECOND EXAMINATION BY THE EXAMINING AGENCY, USING THE SAME OR A DIFFERENT EXAMINER.

. INDIVIDUALS TRANSFERRED OR REASSIGNED TO A NONSENSITIVE POSITION IN CONNECTION WITH THEIR REFUSAL TO UNDERGO A POLYGRAPH EXAMINATION SHALL NOT INCUR ANY LOSS IN GRADE, RANK OR PAY.

. THE FACT THAT AN INDIVIDUAL REFUSED TO UNDERGO A POLYGRAPH EXAMINATION SHALL NOT BE DISSEMINATED TO THE INDIVIDUAL'S SUPERVISOR OR EMPLOYER, UNLESS ADMINISTRATIVE ACTION IS BEING CONSIDERED.

. ANY ACTIONS TAKEN IN CASES INVOLVING THE POLYGRAPH ARE APPEALABLE IN ACCORDANCE WITH APPLICABLE PERSONNEL OR SECURITY APPEALS PROCEDURES.

. PRIOR TO THE EXAMINATION, EXAMINEE MUST BE ADVISED OF THE NATURE AND CHARACTERISTICS OF THE POLYGRAPH INSTRUMENT, INCLUDING AN EXPLANATION OF THE PHYSICAL OPERATION OF THE INSTRUMENT AND THE PROCEDURES TO BE FOLLOWED DURING THE EXAMINATION.

. EXAMINEE MUST BE ADVISED IF THE POLYGRAPH EXAMINATION AREA CONTAINS A TWO-WAY MIRROR OR OTHER DEVICE, THROUGH WHICH THE EXAMINEE CAN BE OBSERVED AND IF OTHER DEVICES SUCH AS THOSE USED IN CONVERSATION MONITORING OR RECORDING, WILL BE USED SIMULTANEOUSLY WITH THE POLYGRAPH.

. POLYGRAPH EXAMINATION TECHNICAL REPORTS SHALL BE RETAINED BY THE OFFICE CONDUCTING THE POLYGRAPH EXAMINATION AND SHALL

NOT BE DISSEMINATED EXCEPT AS REQUIRED BY LAW.

. THE RESULTS OF A POLYGRAPH EXAMINATION MAY BE MADE AVAILABLE ONLY TO:

.. OFFICIALS WITHIN DOD RESPONSIBLE FOR PERSONNEL SECURITY, INTELLIGENCE, COUNTERINTELLIGENCE, LAW ENFORCEMENT, AND THE ADMINISTRATION OF JUSTICE.

.. LAW ENFORCEMENT OFFICIALS OUTSIDE DOD WHEN THE EXAMINATION HAS BEEN CONDUCTED IN CONNECTION WITH THE INVESTIGATION OF A CRIMINAL OFFENSE OR REVEALS CRIMINAL ACTIVITY ON THE PART OF THE INDIVIDUAL EXAMINED.

.. THE EXAMINEE OR HIS OR HER LEGAL COUNSEL, UPON REQUEST.

.. DOD COMPONENT MEMBERS OF THE NATIONAL FOREIGN INTELLIGENCE BOARD (NFIB) AND OTHER NFIB MEMBER AGENCIES PROVIDED THERE IS AN OFFICIAL NEED FOR THE INFORMATION AND THE THIRD AGENCY LIMITATION WILL BE APPLIED.

.. THE NATIONAL ARCHIVES AND RECORDS SERVICE, GENERAL SERVICE ADMINISTRATION, UPON RETIREMENT OF THE FILE.

. POLYGRAPH EXAMINATIONS SHALL BE ADMINISTERED ONLY BY DOD POLYGRAPH EXAMINERS WHO HAVE BEEN SELECTED, TRAINED, AND CERTIFIED IN ACCORDANCE WITH ESTABLISHED DOD POLICIES AND PROCEDURES.

THE QUESTION HAS BEEN RAISED ABOUT THE IMPACT ON THE MORALE OF THOSE EMPLOYEES SUBJECT TO EXAMINATIONS UNDER THE PROPOSED CHANGES. WE DO NOT BELIEVE THAT EMPLOYEE MORALE WILL BE ADVERSELY AFFECTED SINCE ONLY QUESTIONS OF A COUNTERINTELLIGENCE NATURE MAY BE ASKED, AND THE RESULTS OF THE POLYGRAPH EXAMINATION CANNOT BE RELIED UPON AS THE SOLE BASIS FOR JUDGMENTS RESPECTING THE EMPLOYEE. THIS ASSESSMENT IS SUPPORTED BY A 1982 AIR FORCE SURVEY OF INDIVIDUALS WHO, AS PART OF A PILOT PROJECT, UNDERWENT COUNTERINTELLIGENCE SCOPE POLYGRAPH EXAMINATIONS IN CONNECTION WITH DETERMINING THEIR ELIGIBILITY FOR ACCESS TO EXTREMELY SENSITIVE AND HIGHLY CLASSIFIED USAF PROJECTS. SUBSEQUENTLY, THESE INDIVIDUALS WERE REQUESTED TO COMPLETE A

QUESTIONNAIRE, ON A STRICTLY ANONYMOUS BASIS, REGARDING THEIR REACTION TO THE EXAMINATION. MORE THAN 98% OF THE INDIVIDUALS RESPONDING INDICATED THAT THEY--WERE NOT OFFENDED, HUMILIATED OR DEGRADED BY THE EXAMINATION-DID NOT FIND THE EXAMINATION TO BE AN UNWARRANTED INTRUSION ON THEIR PRIVACY --FELT COUNTERINTELLIGENCE POLYGRAPH EXAMINATIONS ENHANCE THE SECURITY OF THE WORK ENVIRONMENT -AND, WOULD UNDERGO A POLYGRAPH EXAMINATION IN THE FUTURE. THIS SURVEY AND A NUMBER OF OTHERS ARE DETAILED IN THE DEPARTMENT'S REPORT ON ACCURACY AND UTILITY OF THE POLYGRAPH, COPIES OF WHICH HAVE BEEN PROVIDED TO THE COMMITTEE.

IN CONCLUSION MR. CHAIRMAN, WE BELIEVE --ON THE BASIS OF OUR EXTENSIVE EXPERIENCE WITH THE POLYGRAPH-- THAT THIS UNIQUE INVESTIGATIVE TOOL CAN, WHEN PROPERLY CONTROLLED, BE EMPLOYED IN A MANNER THAT DOES NOT VIOLATE THE RIGHTS AND PRIVACY OF OUR EMPLOYEES, AND YET PROVIDE THE DEPARTMENT WITH A GREATER DEGREE OF SECURITY ASSURANCE WITH RESPECT TO OUR MOST SENSITIVE PROGRAMS THAN WE NOW HAVE. WE BELIEVE THE MERE POSSIBILITY OF BEING SUBJECTED TO A POLYGRAPH EXAMINATION WILL ACT AS A POWERFUL DETERRENT TO THOSE INDIVIDUALS WHO MIGHT CONSIDER AN ATTEMPT TO PENETRATE OR COMPROMISE SUCH PROGRAMS. RECENT HISTORY CLEARLY INDICATES THE EXTENT OF DAMAGE THAT CAN BE CAUSED BY EVEN ONE PERSON WHO HAS ACCESS TO SENSITIVE INFORMATION WHO IS WILLING TO SHARE THAT INFORMATION WITH OUR ADVERSARIES. AS HAS BEEN SAID, THOSE WHO IGNORE HISTORY ARE DESTINED TO REPEAT IT. PERSONALLY, MY RANK AND RECORD NOTWITHSTANDING, I DO NOT CONSIDER IT AN INTRUSION ON MY

PRIVACY FOR THE GOVERNMENT TO ASK ME PRIOR TO GIVING ME THE CAPABILITY TO DO SUCH HARM, WHETHER I AM WORKING FOR THE OTHER SIDE. INDEED, IT ONLY SEEMS PRUDENT THAT IT DO SO.

ONCE AGAIN, MR. CHAIRMAN, I APPRECIATE THIS OPPORTUNITY TO APPEAR BEFORE THE COMMITTEE TODAY AND HOPE THAT I HAVE BEEN SUCCESSFUL IN CLARIFYING FOR YOU THE NATURE, EXTENT AND PURPOSE OF CHANGES TO OUR POLYGRAPH POLICY NOW UNDER CONSIDERATION. WE WELCOME ANY SUGGESTIONS THAT THE COMMITTEE MAY WISH TO OFFER US IN THIS REGARD. I WILL NOW BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

Currently authorized uses of the polygraph	Proposed directive/regulation
DOD CURRENT/PROPOSED USE OF POLYGRAPH	
Investigation of crimes punishable by death, or confinement for one year or more	No change.
Investigation of unauthorized disclosures of classified information	No change.
Resolution of serious allegation which might affect security clearance that cannot be resolved through further investigation	No change.
Military and civilian personnel assigned to the Central Intelligence Agency	No change.
To test agents, sources or operatives in foreign intelligence or counterintelligence activities	No change.
Civilian and contractor personnel for employment, assignment or detail to the National Security Agency (NSA). Military personnel[1] after assignment or detail, only in connection with highly compartment duties	All military personnel, upon assignment or detail to NSA, are subject to counterintelligence scope, polygraph examination.
To assist in personnel security investigation of foreign nationals when background information cannot be otherwise verified	Initial and aperiodic, counterintelligence scope, polygraph examination.
When requested by the subject of a criminal, counterintelligence or personnel security investigation for the purpose of exculpation	No change.
COUNTERINTELLIGENCE POLYGRAPH EXAMINATION	
DOD policy does not currently provide for a separate, counterintelligence scope, polygraph examination	Initial and aperiodic (random selection) examination of civilian, military and contractor personnel for access to specifically designated information within a special access program, approved by the Deputy Under Secretary of Defense for Policy (DUSD (P)). In exceptional cases for interim access to Sensitive Compartmented Information, prior to completion of the background investigation. For employment in or assignment to critical intelligence positions in the Defense Intelligence Agency, designated by the Director, DIA.
Action shall not be taken against an individual solely on the basis of the results of an analysis of polygraph charts	When deception is indicated on polygraph charts, the examiner will attempt to resolve the matter with the examinee. When the indicated deception is not resolved with the examinee at the time of initial polygraph examination, the results of the examination shall be forwarded to the requesting agency.

Currently authorized uses of the polygraph	Proposed directive/regulation
ADVERSE ACTION[2] BASED ON POLYGRAPH EXAMINATION CHARTS	
	If, after review by the requesting agency, the individual's clearance is still in doubt, he will be given the opportunity for reexamination.
	If, after further examination, the doubt remains, a comprehensive field investigation shall be undertaken to resolve the indicated deception.
	If the investigation produces no actionable derogatory information, there will be no change in the individual's clearance status. Exception to this provision must be personally approved by the Secretaries of the Military Departments; Director, National Security Agency; or in the case of other DOD Components, the Secretary or Deputy Secretary of Defense. The criteria for exception is limited to: (1) access to highly sensitive information where time urgency does not permit completion of the investigation, or (2) access to information of such extreme sensitivity that access under the circumstances poses an unacceptable risk to the national security.
ADVERSE ACTION BASED ON REFUSAL TO UNDERGO POLYGRAPH EXAMINATION	
Adverse action shall not be taken against a person for refusal to take a polygraph examination	Adverse action will not be taken on the basis of refusal in criminal or counterintelligence cases.
	Special access program refusals may result in denial of access but shall not affect a person's grade or pay.
	Applicants for DIA critical intelligence positions, CIA "staff-like" access, or any NSA duties, who refuse to take a polygraph examination shall be non-selected.
SAFEGUARDS TO PROTECT RIGHTS OF INDIVIDUALS	
Timely notification of the date, time and place of the polygraph examination	No change.
Advised of right to obtain and consult with legal counsel prior to the examination	Expanded to clarify the right to have legal counsel available prior to, during, and after the polygraph examination. Right to terminate the polygraph examination at any time.
Advised of privilege against self-incrimination	No change.
Probing of a person's thoughts or beliefs or conduct which have no relevance to the investigation are prohibited. (E.g., religion, racial matters, political beliefs and affiliations of a non-subversive nature.)	No change.
No relevant questions may be asked during the examination that have not been reviewed with the examinee prior to the examination	No change.
DOD policy does not currently specify limitations on technical questions	Technical questions necessary to the polygraph techniques must be constructed to avoid embarassing, degrading or unnecessarily intrusive questions.

Currently authorized uses of the polygraph	Proposed directive/regulation
DOD policy does not currently limit relevant questions to counterintelligence topics	Relevant questions asked during screening polygraph examinations must be limited to prescribed counterintelligence topics.
Adverse action may not be taken solely on the basis of polygraph charts	No change.
Prior to the examination, examinee must be advised of the nature and characteristics of the polygraph instrument, including an explanation of the physical operation of the instrument and the procedures to be followed during the examination	No change.
Examinee must be advised if the polygraph examination area contains a two-way mirror or other device, through which the examinee may be observed and if other devices such as those used in conversation monitoring or recording, will be used simultaneously with the polygraph	No change.
A polygraph examination shall not be conducted if, in the opinion of the examiner, the examinee is mentally or physically fatigued, unduly emotionally upset, or rendered unfit to undergo an examination because of excessive use of a sedative, stimulants or tranquilizers	No change.
Polygraph examination technical reports [3] shall be retained by the office conducting the polygraph examination and shall not be disseminated outside the Department of Defense except as required by law	No change.
Polygraph examination results [4] may be made available to: Officials within DOD responsible for personnel security, intelligence, counterintelligence, law enforcement and the administration of justice Law enforcement officials outside DOD when the examination has been conducted in connection with the investigation of a criminal offense or reveals criminal activity on the part of the individual examined The examinee or his or her legal counsel, upon request The National Archives and Records Service, General Services Administration upon retirement of the file	No change.
Polygraph examinations shall be administered only by DOD polygraph examiners who have been selected, trained and certified in accordance with established DOD policies and procedures	No change.
No specific provision contained in current directive for appeal of adverse actions in cases involving use of the polygraph	Any adverse consequences in cases involving the polygraph are appealable in accordance with applicable personnel and security appeals procedures.

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[1] Since the August 6, 1982, Carlucci memorandum, all military personnel at NSA are subject to aperiodic (random selection), counterintelligence scope, polygraph examination. The Carlucci memorandum remains in effect at NSA because of congressional exemption.

[2] Adverse action includes any of the following: denial or revocation of security clearance, denial or withdrawal of access to classified information, termination of employment, reduction in pay or grade, transfer or reassignment to a nonsensitive position, or nonselection or nonassignment to a sensitive position.

[3] Polygraph examination technical reports include pretest preparations, the examiner's notes, examination charts, and other technical details of the examination.

[4] Polygraph examination results include a synopsis of the examination, the relevant questions asked, the subject's answers, the examiner's opinion concerning truthfulness or deception, and any admissions made by the examinee during the examination.

Chairman **Tower**. Thank, you General Stilwell.

I am going to ask you a series of questions that in fact you have already covered. However, I want to illuminate and clarify these points for the record.

In DOD's new Counterintelligence Polygraph Program, would you ask counterintelligence-type questions only, not lifestyle questions?

General **Stilwell**. In the proposed expanded use of polygraph that is written in our policy, sir, we would avoid any personal lifestyle questions and ask questions only of a specific counterintelligence nature.

Those are, in short:

> Have you ever been engaged in espionage or sabotage against the United States or know anyone who is?
>
> Have you ever ever been approached to sell classified information or given such classified information?
>
> Do you know anyone who has sold or given classified information to an unauthorized person?
>
> Have you had any unauthorized contact with representatives of a foreign country?

That is the total range of questions.

Chairman **Tower**. Would only those individuals with access to very highly classified information be subject to the polygraph test?

General **Stilwell**. That is made very clear, Mr. Chairman, in our proposed policy.

Chairman **Tower**. Should an individual respond negatively to all questions on the examination, but with an indication of deception, would you initiate a thorough field investigation?

General **Stilwell**. That is correct, sir.

Chairman **Tower**. Will you take adverse action only if the field investigation yields damaging information?

General **Stilwell**. That is correct, sir, with the one proviso that provided for the Secretary of Defense and the three Department Secretaries to take action based on the polygraph if there is no other derogatory action and where the issue is access or no access to a sensitive intelligence program of extraordinary importance to the security of the United States.

Chairman **Tower**. General Stilwell, there has been concern among some Senators about people giving deceptive answers in a polygraph examination that are not detected.

I am also concerned about the possible false indications of deception since I think most of us want to make certain that no Government employee is unfairly treated as a result of polygraph use.

However, having said that, could you comment on the extent to which effective countermeasures to the polygraph can be used?

General **Stilwell**. Mr. Chairman, this is something that I would have to defer to the experts. As to the extent any individual can properly prepare himself psychologically and physiologically to beat the examination, I don't know.

My only answer is a personal one. I doubt that. I know I couldn't. I am very impressed by that machine and the techniques of use.

I know that one of the techniques, which obviously there is an immediate counter to, is the use of drugs and that is countered immediately by an urinalysis test.

Chairman **Tower**. We will reserve that question for our panel. Senator Bingaman?

Senator **Bingaman**. Thank you, Mr. Chairman.

Let me just ask a question on this.

You indicated, I believe, that under the proposal less than 1 percent of the total DOD employees would be polygraphed each year.

How many people are we talking about?

General **Stilwell**. The total roles, to use that figure, sir, the total roles of the Department of Defense are roughly 2.4 in uniform and 1.1 civilians, for a total of 3.5 million.

Then when you add the entire contract community, that, I guess, would come up to a figure of maybe 4 million, sir. We are talking of 1 percent of that.

Senator **Bingaman**. So, approximately 40,000 people a year would be given the polygraph under your proposal?

General **Stilwell**. I would say less than 1 percent, sir. I just took that out of the air.

Let me answer it this way, sir.

If you exclude NSA, the polygraph complement of the Department of Defense conducted roughly 8,000 examinations last year, not of this type, of course.

We have a training school at Fort McClellan. There is a capacity to turn out, because standards are high, 50 students a year who must then go through an internship.

So, the theoretical capacity for dealing with this would suggest that for the approximate future one would have a capacity perhaps to run some 10,000 such examinations in 1 year, in addition to our current workload.

Then, of course, that is a theoretical capacity. The program and the extent of examining for this purpose will depend upon the judgment of the Secretaries of the Departments and the other people who are responsible for these programs of who should in priority in their sensitive programs have these examinations.

Senator **Bingaman**. I have seen a figure that at one point there were 24,000 polygraphs administered in the Department of Defense last year. Maybe that was in OTA's report or somewhere.

Is that not an accurate figure?

General **Stilwell**. I have the statistics here, sir. The figure that I have been using is roughly 17,000 of which the largest percentage of those were the NSA figures. The sum of 10,000 for personnel screening, 7,000 plus for criminal and then a general category of "Others" for a global total of 18,000 in 1983.

Senator **Bingaman**. What percentage of increase would you contemplate as a result of this new memorandum which you are proposing to implement when this moratorium ends?

General STILWELL. Exclusive of NSA, last year was 8,000. I would guess that at the very outside we would double that figure.

Senator BINGAMAN. In the first year?

General STILWELL. In the first 3 years. It is going to take considerable time, sir, to bring a program of this nature on line.

Even my figure of 8,000 3 years hence presupposes an expansion, which is moot at the moment, of the corps of polygraph examiners.

Senator BINGAMAN. You indicated, as I understood you, that there are no adverse consequences which can flow directly from failure to pass a polygraph exam or refusal to take a polygraph exam alone.

I have read through OTA's summary of their report. The summary says:

> The proposed revisions to DOD 5210.48 provide adverse consequences for refusal to take a polygraph examination when established as a requirement for selection or assignment as a condition of access. Refusal to take the examination may, after consideration of other relevant factors, result in nonselection.

It is accurate to say that the adverse consequences, at least to the extent of nonselection for a position, are being expanded also as part of this memorandum from what you now have?

General STILWELL. What you have read there is language taken from an earlier version of our proposed polygraph changes. Our current proposed policy is that individuals who refuse to take a polygraph examination in connection with determining their continued eligibility for access to information in special access programs may be denied access to the information in question but that the refusal shall not affect the person's grade or pay.

As I reported to the chairman, we would then do a reinvestigation to try to ascertain what was the story. If we found something that led us to conclude that there was good reason why he refused, this then would be adjudicated up to the Secretary of the Department who would then deny him access on a judgmental basis, but not solely on the refusal.

Senator BINGAMAN. What if you have a situation where the person just says, "I don't want to take a lie detector exam, I think it is an invasion of my privacy to do so, but I would like to get this promotion"?

Can you turn him down because of his refusal to take the lie detector test, assuming you look into everything and find nothing wrong with him that you didn't know about before?

General STILWELL. I would, sir; I would. I would quote our President, I would quote the Prime Minister of Great Britain that at some point there has to be a delicate balance between the rights of the individual on the one hand and the imperative of national security on the other, because what is at stake is whether—it is not a right or privilege—that individual is made privy to something of extraordinary importance to the security of 250 million people.

Senator BINGAMAN. So, under the directive you are proposing to implement as you see it, one of the consequences of refusing to take an exam may well be nonselection for a position of a classified nature?

General STILWELL. Nonselection for access to that information. But separate and distinct from all the other prerequisites and emoluments, opportunities for promotion, reassignment, or whatever.

That information is not put in his record.

Senator **Bingaman**. But he could not take a position which gave him access or required him to have access to classified information if he refused to take the exam?

General **Stilwell**. He could not have access to the information which was the reason for requesting that he take the polygraph in the first instance, but it doesn't mean that he might not have access to other information.

Senator **Bingaman**. Could you describe what happened in the *Tillson* case which I read a few newspaper accounts of?

One of the accounts said Mr. John Tillson, decorated in Vietnam for gallantry, failed the polygraph in the Pentagon in 1982, and it required the efforts of a Post reporter to provide the polygraph was lying in order to clear his name?

Would you give me more information on that case, if you know?

Chairman **Tower**. Let me say, General, that this is an open session. If you want to respond to a question that contains sensitive information, we will have to clear the room.

General **Stilwell**. There is some sensitivity from a privacy aspect.

Let me say that investigation, which involved me also as a suspect, had to do with an unauthorized disclosure of information. That is point one.

Point two, the administrative action taken against Mr. Tillson, which I think is a matter now of record, was not based directly on the results of the polygraph examination.

Senator **Bingaman**. I think my time has expired, Mr. Chairman. I would like to ask one more question if we have time at some stage.

Chairman **Tower**. Senator Dixon?

Senator **Dixon**. Thank you, Mr. Chairman.

General, may I say at the outset that these questions are not intended to indicate any objection to the use of the polygraph.

From time to time in other executive positions I have held as a State official in Illinois, both as State Treasurer and Secretary of State, in matters involving questions of honesty and criminal impropriety I have employed the use of polygraph. So, I am cognizant of the fact there are situations so delicate it should be done from time to time.

I want you to understand I feel that way.

Can I ask you in a general way whether you are saying to us this type of testing is employed in these kinds of general circumstances either with reference to the employment of personnel in delicate classified situations or the advancement of a person into a delicate classified situation involving national security on the one hand or in the case of general types of criminal impropriety in matters involving national security on the other?

Is that a kind of a general point on which you employ the use of polygraph?

General **Stilwell**. We employ the polygraph in a variety of means right now, but essentially for five major purposes.

Of course, one is the whole range of criminal investigation.

Second, it is used in a very limited way now to resolve derogatory information with respect to a background investigation which cannot be resolved in any other way.

Senator **Dixon**. Or a person going into a classified position as distingushed from a nonclassified position, I take it?

General **Stilwell**. That is correct. That is the clearance. That is not a screening, but it is a use, a final resort to an investigation tool. If you don't use that, you wind up presumably denying clearance.

We, of course, use it for purposes of exculpation. We use it in counterintelligence operations for obvious reasons, among other things to determine the bona fides of a source. We use it in connection with investigations of unauthorized disclosures of information.

Senator **Dixon**. Let us address that for a minute.

Only in a case of unauthorized disclosure of classified security type information?

General **Stilwell**. Exactly.

Senator **Dixon**. Not generally speaking?

The disclosure of information that would not be harmful to our national security?

You would not use it in a case of something that was just embarrassing to your agency or anything of that type?

General **Stilwell**. No way.

Senator **Dixon**. That is part of the guidelines you employ here?

General **Stilwell**. Yes, sir. These have been in effect for a long time.

Senator **Dixon**. I wasn't clear in your testimony about the type of polygraph operators you use in connection with your work.

Are they internally trained? Where do you get these polygraph operators?

General **Stilwell**. We train them, sir. We train them in a school which, as I said, standard-wise, capability-wise is second to none. It is at Fort McClellan.

We also train polygraph operators for other agencies of the Government there. It is a tough case. You have to be a college graduate to get in. You have to have field experience as well.

So, we produce our own. We don't contract out for that.

Senator **Dixon**. In those cases where from time to time you find that someone has not adequately responded to the questions in the polygraph testing, I take it in your response to the Chair and in your direct testimony you do then a background investigation to lend further credence to whatever kind of decision you have arrived at as a consequence of the test; is that right?

General **Stilwell**. As I tried to make clear, Senator Dixon, we don't arrive at any decisions on the basis of the test per se which, as the experts will show you, is a series of charts which interpret various physiological reactions.

Senator **Dixon**. I am familiar with the system.

General **Stilwell**. Let us again say that in this very controlled and limited investigation, these three or four questions that are asked, there is clear deception by the individual, there is an immediate post-mortem on that, between the polygraph operator and the individual, which attempts to clarify this against the control questions which establish his normal reaction, as you know. Then there could be another examination by another operator.

Senator DIXON. Outside your agency?

Let us say that I was told as an employee who was under evaluation by a polygraph exam for advancement to a higher position in a classified situation, that I had not adequately responded to at least one question.

Would I have an opportunity to go outside the system to have a polygraph taken that would be subject to evaluation as well as the one you, yourself, have taken?

General STILWELL. We make provisions for that.

Senator DIXON. It can be done?

General STILWELL. We make provisions for that, yes, sir. We have to assure ourselves that the private examiner meets the standards that are set.

Senator DIXON. The reason I ask the question is that the system is not entirely perfect, I understand.

The second thing is the emotional attitude of the individuals involved can come into it.

You suggest drugs, you have problems with alcoholics. You can have problems with people with emotional disturbance of certain sorts. So, it is not a fail-safe system.

General STILWELL. As you know, Senator, that is the whole purpose of the basic control questions. They establish the man's normal reaction under stress.

If he is nervous, it appears in the heartbeat, in terms of sweat glands, in terms of all of these.

I tell you I am impressed by that machine, sir.

Senator DIXON. The machine is more right than it is wrong, but it is not perfect. That is the point, General.

The only reason I am asking these questions, I am wondering whether it could be possible to make available, at least to this Senator, the procedures that employ for an appropriate review of what happens in the case of those who do not adequately respond and thus are placed in a position such as my colleague has suggested where they might lose a promotion or decent employment opportunities or it might even reflect unfavorably on them.

I realize you don't publicize them generally, but these things are known inside the institution itself, and so forth, to the disadvantages, I am sure, of the individuals.

I am wondering about the procedures you follow for a fair review. I have had instances where I have discharged people in these circumstances.

I have also had a couple of instances where I thought people were unfairly treated as a consequence of the polygraph system.

I would like to have some kind of assurances that individuals are given an appropriate review of what occurs. That is what I am driving at.

General STILWELL. I hope, Senator Dixon, among other things, you will have an opportunity to peruse in detail page 24 of the statement where we have attempted to list in one place—they are proliferated through our documents—the total range of safeguards for the individual.

Senator DIXON. Good. I will do that and get back to you.

General STILWELL. He has counsel, of course, if he wishes.

Senator DIXON. I noticed that.

Is that true in all cases or only in those involving the possibility of criminal culpability or something of that character?

General STILWELL. He can ask for counsel in every instance.

Senator DIXON. I think that is very fair.

I don't think I have any further questions.

Chairman TOWER. Senator Bingaman, you have an additional question or two?

Senator BINGAMAN. Yes.

Let me ask something, General, concerning the fifth category of circumstances under your example indicating the disclosure of unauthorized information.

Suppose that an article appears in the morning newspaper which contains previously classified information, still classified information, or that somebody raises some information at a congressional hearing because of access that they have obviously had to somebody inside the Defense Department who gave them access to classified information; so there is an unauthorized disclosure of classified information.

Is that an appropriate circumstance in which you would use the polygraph to run down where that leak came from?

You said in your earlier statement that the purpose of this is not to find leaks. I am just trying to figure out how it can be used to detect unauthorized disclosure of classified information, but not to find leaks.

How do you make that distinction?

General STILWELL. I don't. Let me clarify for you, sir.

Our extant Department of Defense directive on the polygraph authorizes its use in connection with an investigation into unauthorized disclosures of classified information.

We have been operating under that authority deriving from the Secretary of Defense for many years. We visualize no change at all in that procedure.

Senator BINGAMAN. Except that it will apply to more people under the new memorandum. Is that correct?

General STILWELL. No, sir. We only use it, sir, as an investigative tool if there is an investigation being conducted on the loss to the public, to hostile intelligence, whatever, of classified information. Let me say that it is very rarely used.

I have the responsibility for the Department, sir, at least for the Department at the OSD level, to run down leaks, if you will. I have been abysmally unsuccessful in that pursuit, sir.

But investigation of a leak or unauthorized disclosure does not per se mean polygraph because clearly we would not even consider the polygraph unless we had by the virtue of our investigation focused in on a small group of people who by virtue of the process of investigation were suspect, and then one might with the proper authority, which I can grant, ask that those people be polygraphed as a means of trying to conclude that particular investigation.

The leak and the unauthorized disclosure are to that extent synonymous.

Senator BINGAMAN. So that if the information that was leaked was information that was known to a small enough group of people that you could say there are 30 people who had access to this information, then it would be appropriate for you to administer a polygraph exam to those 30?

General STILWELL. Yes, sir.

Senator BINGAMAN. To see which one had leaked that information either to the congressional committee or to the newspaper in the example I posed?

General STILWELL. I can't imagine our ever using it in the former case, sir.

It would be when information got into an environment or domain where it could clearly be equally accessible to hostile intelligence services.

Senator BINGAMAN. That is the question I had, Mr. Chairman.

Thank you.

Chairman TOWER. Thank you, Senator Bingaman.

One final question, General Stilwell.

What has been the success of the intelligence community in obtaining vital security information from counterintelligence polygraphs of the type that you propose?

You can summon any of your associates to supply the answer.

General STILWELL. May I submit that for the record?

Chairman TOWER. You may submit that for the record, General.

[Polygraph utility study dated February 1984 contains the answer to this question. The study is for official use only.]

Chairman TOWER. Any further questions, Senator Bingaman?

Senator BINGAMAN. No, Mr. Chairman.

Chairman TOWER. General Stilwell, thank you very much for your presentation this morning. It has been very useful to us.

General STILWELL. I thank you for this opportunity, Mr. Chairman. As I said at the outset, and would underscore again, we do think this is a very vital program.

We know the committee will be considering the amendments, the rider that is now in effect in conjunction with the authorization bill for fiscal year 1985.

We do enlist your support in the noncontinuance, sir, of that moratorium so that we can then go through, assuming reasonable consensus in the Congress, with the finalization of our proposal, its publication in the Federal Register, and ultimately its enactment as a course of action for the Department.

We stand ready, sir, for you, for the other members of the committee and, of course, the staff, to pursue this in any further detail that you wish.

Thank you for your courtesy.

Chairman TOWER. Thank you, General.

Our second panel of witnesses, please arrange yourself at the table from left to right in the order I call your names.

Our second panel will consist of Norman Ansley, Chief, Polygraph Division, Office of Security, National Security Agency; Mr. James Wilson, Director, New Mexico Governor's Organized Crime Prevention Commission, and expert on polygraphs; Dr. Leonard Saxe of Boston University; Dr. David C. Raskin of the University of Utah; and Dr. Gordon Barland.

We will hear from each witness and then have questions for the panel following the presentation of all the witnesses.

Gentlemen, you may submit your complete statement, supporting documents, anything you want to submit for incorporation in the record and summarize or you may present a written text.

In any case, you may proceed any way you see fit.

We want to thank you for coming today. It is a great service to the committee that you are performing.

We will hear from Mr. Ansley.

STATEMENT OF NORMAN ANSLEY, CHIEF, POLYGRAPH DIVISION, OFFICE OF SECURITY, NATIONAL SECURITY AGENCY

Mr. **Ansley**. Thank you.

I would like to submit for the record my statement. Also, DOD's study called Accuracy and Utility of Polygraph Testing and a study by the security committee of DCI on "Polygraph Utility".

Chairman **Tower**. That material will be incorporated in the record.

Mr. **Ansley**. Thank you.

[The DOD study, "Accuracy and Utility of Polygraph Testing" and the DCI study, "Polygraph Utility," are retained in committee files.]

Mr. **Ansley**. I would like to mention that the National Security Agency and its predecessor agency has used the polygraph as a condition of access for all civilian employees since 1951.

Our program for SCI access for contractors also dates from the 1950's. Also, for certain other affiliates with our agency full screening polygraph examinations is a requirement for access to the agency.

We have three kinds of polygraph tests.

The first is a full screening examination and that helps us determine that we are talking to the person who represents what he claims to be, determines his suitability for access to classified information, and serves to deter or detect espionage.

The second type of polygraph examination is given in support of investigations and only after investigation has been initiated and all the reasonable steps have been taken and the use of polygraph is then used as an investigative tool.

Third, tests limited to counterintelligence questions used for aperiodic situations and for our reinvestigation program which occurs at 5-year intervals.

The reinvestigation polygraph scope is the same as the aperiodic scope which was described by General Stilwell.

We operate under Public Law 88-290 for our authority for our security programs. Our polygraph program operates under the Department of Defense Regulation 5210.48.

The evaluation of that information is under the Director of Central Intelligence, Directive 1/14, and our aperiodic program is based on the Carlucci memorandum of 1982.

We have been primarily interested recently in the experience we have had with the aperiodic program, what kind of results would we get, what would be the problems with false positives as well as false negatives.

So we did a detailed survey of 1,770 polygraph examinations of that scope conducted in the last 10 months of 1983. Of those 1,770 examinations of employees, military assignees, contractors with SCI access, we had only 71 persons who required a reexamination. The others were all cleared—no problems.

Of those 71 who required a second examination, all but about 4 were cleared up in the second examination and those 4 were cleared up in the third examination. We had no people branded as liars.

Thirty of those people gave us information that required evaluation and further investigation. The most serious was one admission which reported an approach by a representative of a foreign embassy seeking classified information for which they indicated they would be willing to pay.

The person did not report it right away because he was embarrassed because he did not ask more about their identity, how he could get in touch with them, other details he thought he should have asked, but didn't because he turned them down so quickly. He did give us leads for an investigation.

We have had no hositility or refusals. The director of security had open house meetings with all employees, explained the program to them and answered any question they could ask. I think it had a lot to do with the reception.

One of the plans prepared for the expansion of the program under the new DOD directive which calls for polygraphing military personnel before they are assigned to NSA by the respective services, would be limited to counter intelligence questions.

As it is now, we do include military personnel within our Agency in the aperiodic program. They are asked the counter intelligence questions. They are part of the random selection rather than prior selection.

In every polygraph examination, of course, we explain to a person his rights. There is a full explanation of rights, acknowledged by signing a form to that effect.

We explain to them that the room is equipped with two-way mirrors. We tell them it is being recorded, it may be monitored. All of that is fully understood beforehand.

We inquire about the health of the person beforehand to see if they are suitable for testing on that date. By the way, occasionally they are not, people coming in with the flu, asthma, head cold, and similar reasons.

About 1 percent of our population that is to be tested has to be reexamined because of simple health problems. That did account for a number of those that were reexamined in the aperiodic program.

We have a full discussion of the questions because the questions have to be tailored to the person's language, but they also have to be tailored to his background, to his experience in the intelligence world.

The questions are worded with their cooperation so that they can answer them with a clear yes or clear no. After we have arrived at that, we explain the testing procedure. Many of these people have had polygraph tests before. Even so, we go through with an explanation of the test.

As we place attachments on the person, we explain what the attachments are. I would like to show that during a 3½-minute video picture that will give you a little insight as to what the test looks like for those who have not taken the test.

Our instruments are the product of about 85 years of research and developmnet and they now record two respiration channels, they also record electrodermal responses and cardiovascular responses, changes in blood volume which relate to changes in blood pressure.

I do not want to give you the impression it is the last word in instruments. It is very good instrumentation, but we are embarked on a long program, on the second year of an 8-year research program to develop a better polygraph instrument.

One of the scientists here, Dr. Raskin, has part of that contract for the Department of the Army.

Other programs in that research area are underway by the FBI and by NSA.

With respect to the test itself, we run about three charts of 4 or 5 minutes each. All of the questions are repeated several times. If we find consistent significant physiological reactions to a specific question, we discuss it with a person and ask for the reason.

If they give us a reason for that sensitivity, we reincorporate that in the question and reword the question. When we arrive at a mutually acceptable question, we go back and test again.

If we cannot continue on that day, we bring him back for another test. On no occasion do we let a person simply leave the room feeling he has reacted to the questions and not had a chance to explain.

With respect to the techniques, there is a good deal of misunderstanding. As there are names for psychological tests and aptitude tests, there are names for specific techniques in polygraph testing. They fall into various classes and groups.

There is no specific technique used for screening. A variety of techniques is used for screening applications. There are discussions among experts about whether a zone comparison technique or relevant-irrelevant technique or peak-of-tension technique is preferable.

There does not appear to be much difference in the accuracy of different techniques. Application to screening does not mean it is less accurate than the application to criminal testing.

In regard to countermeasures, we have not experienced any severe difficulty with the routine countermeasures we see among applicants or in the counterintelligence cases. That is not to say we are not concerned.

Part of our long-range research programs are about highly sophisticated countermeasures which may give some problems. We plan to continue that research over a long period of years.

I would like to say that various departments of the Department of Defense—Army, Air Force, National Security Agency—have contract research underway, some with distinguished scientists, some of it within the Department.

The National Security Agency and the Federal Bureau of Investigation have recently joined to establish a polygraph research laboratory and which will be operated by two psychophysiologists who are also polygraph examiners, who will have lab assistants and regular examiners, a full staff to conduct polygraph research over a long period of time, many years.

In summary, I would like to say that we feel that the use of the polygraph is absolutely vital to the security of the National Security Agency and similar operations within the Defense Department.

With your permission, sir, I would like to show a very brief video tape.

[Video presentation.]

Mr. Ansley. That completes my presentation, sir.

[The statement of Mr. Ansley follows:]

Prepared Statement of Norman Ansley, Chief, Polygraph Division, Office of Security, National Security Agency

Mr. Chairman, I appreciate the opportunity to appear before the committee today to explain the polygraph program at the National Security Agency.

NSA, and its predecessor agency, has used the polygraph as a personnel security screening technique since 1951. Originally it was used as an emergency measure to expedite the security processing of new employees who were awaiting clearance. In 1953, the polygraph examination became a condition of access for all civilian job applicants. Since the 1950s a polygraph examination has also been a requirement for contractor personnel requiring sensitive compartmented information (SCI) access. We also polygraph other affiliates such as GSA custodial personnel, Federal protective service police and consultants. In late 1982 we initiated a program to polygraph military assignees once they are on-board at NSA. I will say more about this later.

The function of the polygraph is threefold:

First, to assist in verifying the identity of an individual being considered for access to Sci. Secondly, to assist in focusing upon suitability and connterintelligence issues, though I must add that from my point of view all our polygraph questions and programs are concerned with counterintelligence.

Third, to detect espionage, sabotage and terrorism or the potential for same.

We have three basic polygraph programs at NSA which are integral to our overall personnel security supervision program. This program includes background and special investigation, professional security officers assigned to major agency organizations and an aggressive security awareness program.

The first polygraph program is for initial access to sensitive information. Here we conduct full screening polygraph examinations of applicants for employment, contractor applicants for access, GSA personnel and a few other categories of affiliates. The full screening polygraph examination consists of relevant life style and counterintelligence questions.

A second program is for single or special issues. Here we use the polygraph to help resolve issues bearing on the continued access of an affiliate—for example to resolve allegations of drug use or possible espionage by an affiliate.

We have had these two programs for more than 30 years.

Our third program is the aperiodic and reinvestigation polygraph. In Aug. 1982 Deputy Secretary of Defense Carlucci, acting on recommendations from the DOD Select Panel on Personnel Security, authorized polygraph examinations of DOD affiliates who held sensitive compartmented information access. The director directed this program be implemented at NSA. Since then we have been polygraphing onboard affiliates, persons having access to sensitive NSA information: Employees, contractor personnel, and military assignees. The program applies to everyone. It is mandatory. The scope of this polygraph program is limited strictly to counterintelligence questions: Espionage, sabotage, unauthorized disclosure of classified information, unauthorized contact with agents or foreign governments and knowledge of others involved in the foregoing. For our purposes today I will call this the aperiodic polygraph program though in fact we polygraph our affiliates under this program under several criteria: Randomly, aperiodically; at the time of the five year reinvestigation; and for especially sensitive projects.

Some statistics on this newest NSA polygraph (and I must add here that in years past we have had versions of this program but lacking the mandatory feature) are quite interesting. During the last ten months of 1983 we polygraphed 1,770 affiliates under the aperiodic program. Of these 1,699 showed no specific reactions to the relevant polygraph questions. Of the 71 who continued to show reactions, 67 were cleared up in a second polygraph examination and the remaining four in a third examination. Thus, of 1,770 cases we have zero cases where we have unresolved issues based on our analysis of the polygraph charts. Some 30 of these 1,770 people did provide us relevant information requiring a more detailed clearance evaluation. None of these 30 are spies. The information they provided is quite miscellaneous—I will give you three examples.

An individual said that he kept a classified military manual in his possession at this residence for several years. He originally took the manual home to study for a test. He returned the manual to us.

An individual knew of improper destruction of crypto keying material. However, he was not personally involved.

Another individual described a suspicious approach by foreign personnel and had failed to report this incident previously. This information is under investigation.

The aperiodic program has been well received by our affiliates. No one has refused to take the polygraph examination. And, so important for research and validity purposes, we have no cases in these 1,770 where a person is under a cloud because of polygraph chart analysis. All cases have been resolved—no one stands accused.

Now I'll describe the overall scope and imapct of our polygraph activities. In 1983 we conducted a total of 10,712 polygraph examinations in all the programs I've described. During 1983 we completed the security processing of 4,531 applicants. We canceled out 2,563 or more than 50 percent for a variety of reasons including the applicant declining to participate in further applicant processing or declining a job offer. NSA's applicant review panel composed of personnel, security and medical managers, looks at problem cases to decide if processing should proceed. The problem may be medical or psychological, security, employability. This panel rejected 815 people for further processing (included in the 2,563 I mentioned above). I estimate that in 90 percent of the panel cases—or 733 of the 815—information obtained during the polygraph interview was relevant to the decision not to further process.

While the polygraph process is a significant collector of information in our applicant processing it is no less a factor in the clearance processing of contractor personnel. During 1983 we polygraphed 1,946 contractor personnel. Two hundred and fifty-seven were denied access based on information developed during the polygraph interview.

The NSA Personnel Security Program is established in Public Law 88-290 and we adhere to the standards set by the DCI for access to sensitive information. Most disqualifying information disclosed during the full screening polygraph examination concerns extensive drug use or undetected crimes. While of course rare, we have had some extraordinary admissions made by applicants during the polygraph interview—murder and train wrecking for example. You will see examples of important information developed during our polygraph examinations in two studies being put before you—the DOD/NSA study on "the accuracy and utility of polygraph testing" and the DCI Security Committee summary of major polygraph cases in the intelligence community "polygraph utility study, February 1984." I will return to this area.

Prior to Mr. Carlucci's Aug. 1982 policy we did not routinely polygraph military assignees. This is on the verge of being fixed. Under the new, proposed DOD polygraph program military personnel are to be polygraphed (CI questions only) by their parent service prior to assignment to NSA. And, as I mentioned they are under the mandatory NSA aperiodic polygraph program. Since December 1982, 679 military personnel have been polygraphed at NSA under this program.

These then, are the polygraph programs. They are only as effective as the polygraph and those that use it can make it.

The current instruments used by Federal agencies are the product of 85 years of development by scientists and practitioners. The physiological channels which they record are the product of lengthy research. The instruments, which are of scientific quality, record respiration, electrodermal responses, and cardiovascular responses. The physiological information is recorded on a moving chart which has a speed of 2½ millimeters per second (about six inches per minute). In each polygraph examination, there are at least two polygraph charts of several minutes each. In more complex situations, there may be as many as six or seven charts. The minimum time for an interview, including a polygraph examination is about one hour, but it more often takes from one and one half to three hours, and occasionally longer than that.

In the pretest interview, the subject of the examination reads a full statement of his rights. In all cases that includes mention of the fifth amendment right to avoid self-incrimination, mention that the subject may refuse to answer any questions, and that the subject may terminate the interview at any time. In a criminal case the Miranda warning is included, or article 31 of the Uniform Code of Military Justice. When the polygraph is used in determinations for clearance and access to classsified information, we advise of the Privact Act of 1974 which includes a discussion of the principal purposes for which the information will be used and mentions that the disclosure of the information is voluntary, and the information will be considered confidential. It warns the person that any information provided relating to violation of criminal laws will be disseminated to law enforcement agencies.

Following the explanation of the subject's rights, there is a review of the subject's general health, and fitness to take a polygraph examination. After that the examiner reviews the issues that are to be resolved during the polygraph examination which includes an opportunity for the subject to explain in detail their view of the matter under consideration. Working with the examiner, the subject and examiner arrive at mutually acceptable questions to resolve the issues. When the technique involves control questions, these questions are also reviewed in discussion with the subject and must be agreeable to the subject. This is also true of irrelevant questions and other questions that are part of the techniques. The testing technique is then explained in detail to the subject. The attachments which are placed on the subject are also explained in detail. The subject is asked to sit still, pay attention to the questions and answer with a definite "yes" or "no", as appropriate.

Basically, the polygraph examination is a method of questioning whereby an individual is required to unequivocably respond with a yes or no answer to direct questions which have been previously reviewed with and the answers agreed upon by the subject of the examination. This questioning is done while the examinee is attached to a very sensitive instrument which monitors the person's respiration, electrodermal response, and cardiovascular activity to determine if there are any significant and consistent changes in these areas in direct response to any of the questions. The objective is to ascertain that there are no such reactions which would indicate that at the time of the examination, the answers posed no problems nor stirred any anxiety. Should significant and consistent reactions occur to any one or more of the questions, this would be a definite indicator that the answer provided to the question as worded on the test was not considered completely satisfactory by the examinee.

Reactions are significant changes from the baseline recording which is established as the norm in each of the recorded areas at the beginning of each polygram or chart. Depending on the individual examinee, these changes may be as massive as a total cessation of breathing or a major increase in blood pressure or as subtle as a change in the inhalation—exhalation pattern or respiration or slight decrease in skin resistance. The point is that the reactions will occur specifically at the problem question and not randomly, they will be significant to the trained examiner, and they will be consistently occurring at the problem question whenever it is asked.

Upon completion of the test series, the examiner makes an initial evaluation of the charts. If the results indicate deception, the subject is told that, and the specific questions are discussed. The subject is given every opportunity to explain his specific reactions to these questions and to make any admission that he chooses. The information provided will be the basis of additional or modified test questions in those areas in an effort to resolve the issue.

Just as there are several standardized intelligence tests and several standardized aptitude tests, there are also a number of standardized polygraph test formats. Each of these has its own name and format. Within the Federal Government, the commonly used techniques include zone comparison, modified Reid control question technique, relevant-irrelevant technique, and peak of tension technique. There are also standard variations of each of these. I am prepared to discuss these techniques in greater detail if the committee so desires. First, however, I would like to show you a brief television tape of about three minutes that displays a portion of a polygraph test.

At NSA, at the conclusion of the examination and interview, the information provided by the examinee is reviewed with him by the examiner to ensure that it has been accurately noted by the examiner. When the examiner begins to prepare his report of the examination, he will again analyze the charts prior to making his final determination. The report of the examination, including the polygraph charts, the examiner's original notes, and the audio tape of the examination and review with the examinee, is reviewed by a supervisor senior examiner. This individual will do a separate analysis of the charts and then review the report with the tape to ensure accuracy. Once statisfied in these areas, the report is forwarded to our clearance division, a completely separate entity within the office of security, where the information will be evaluated to determine the individual's eligibility for access to sensitive comparmented information in accordance with the standards established by Director of Central Intelligence Directive 1/14 (DCID 1/14).

If the information provided is considered disqualifying and the individual is a military assignee, the sponsoring service is notified and usually takes appropriate action to reassign the person to other duties. If the information is not considered disqualifying but the assignee did not pass the polygraph examination, another exam will be scheduled with another examiner to attempt to resolve this matter.

This then, is the manner in which a "real world" polygraph examination is conducted and the quality control procedures work at NSA.

The validity of polygraph techniques has been the subject of research over a period of more than 85 years involving scientists in over a dozen nations. Lengthy research projects have been conducted in the United States, Japan, Israel, Canada, and a number of other nations. All of them arriving at rates of validity significantly above chance and high enough to indicate the positive value of the technique. There are two kinds of polygraph research. One involves the follow-up of real criminal cases in which the polygraph results are compared with either the final outcome of the case or an independent adjudication of the case file. More than 1,900 criminal cases have been followed up in the United States, Israel, and Canada and the average agreement is above 96 percent. More than a dozen such projects have been conducted, with the largest being one by the Commonwealth of Virginia in which the validity of 959 cases was 98.3 percent. The range of all these studies is 86.3 percent to 100 percent. These statistical results, based on the follow-up of real cases, do not include those examinations in which the results were reported as inconclusive. It is the use of inconclusive range that gives the field examiner the opportunity to be fair and safe, and say "I don't know".

Inspector Doran, of the FBI, has spoken of the importance of this inconclusive range. He said, "The inconclusive range serves a purpose—it is the safety zone and should be protected to avoid unnecessary errors. No examiner should render a judgment if he/she is not completely comfortable with his/her findings." [1]

When research is conducted in a laboratory setting where truth and deception is known (except to the examiner), the validity of polygraph techniques average 93.6 percent, with a range of 69.0 percent to 100 percent. Not all of the laboratory projects were conducted to determine validity. Some were projects to evaluate variations in techniques, methods of analysis, specific and often single physiological recordings, and differences in subject populations. For example, the third study by Heckel was of institutionalized delusional psychotics, which produced a low validity, 69 percent; while the several studies of psychopaths have surprised us, with an average detection rate in excess of 90 percent. One observation about laboratory work is that when the experiment is close to field conditions, using trained examiners and good polygraph instruments, the results are uniformly high. That polygraph techniques are cross-cultural is evident from the similarity of the results of studies made in Israel, Iceland, Japan, Canada, India, and the United States.

Among the major techniques, there is little difference in their accuracy. The laboratory validity of control question formats average 95.2 percent, relevant-irrelevant format average 96.8 percent, peak of tension formats average 91.2 percent, and guilty-knowledge formats average 94.4 percent. Analysis of research projects on screening examinations produced an average of 96.7 percent. Since field examiners often use combinations of techniques, no average can describe the accuracy of examinations for individual cases. Moreover, these percentages are so close that the differences are insignificant. It must be noted that screening is not a specific format. There are several standard techniques which are used in criminal investigations which are also used in government screening. The research shows that when these formats are used in screening examinations, the errors are not evenly divided, but show a slight trend toward calling deceptive persons truthful.

There are five scientific studies that are directly related to the validity of screening (Barland, 1981; Blum and Osterloh, 1968; Correa and Adams, 1977; MacNitt, 1942; Hemsley, Heselgrave and Furedy, 1979). There are others which have a relationship to the issue of validity in personnel security, but the research was not conducted for that purpose (Edel and Jacoby, 1975; Lykken, 1960; Leiblich, Naftali, Shmueli and Kugelmas, 1974).

The first scientific study of the validity of screening was conducted by Professor MacNitt of Wilmington College, 1942. Working with the Columbus Ohio Merchants Audit Bureau, they set up an experiment where he would give polygraph screening tests to 59 employees of various stores. The audit bureau picked some employees whose honesty and integrity were considered above reproach, some employees who had confessed to stealing merchandise and money from their employers, and some employees who were known to have stolen goods but had not been confronted. All denied stealing during the tests. Using a relevant-irrelevant technique, MacNitt was able to correctly identify the guilty and the innocent employees in every case, for an accuracy of 100 percent. When he used supplemental searching peak of tension tests, he failed in getting a few details correct, as to the amount stolen, the year stealing started, and other specific details.

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[1] "Inspector William Y. Doran Addresses Federal Examiners." Polygraph 10(2) (June 1981): 61–62. Inspector Doran was Deputy Assistant Director, Laboratory Division, FBI.

In 1968, Blum and Osterloh of Stanford University undertook a study in which real police informants were tested by policy examiners, with regular polygraph instruments, using a relevant-irrelevant technique, as to the truthfulness of the informant's reports. Working with their police handlers, some informants gave completely true statements about what they had observed or heard, statements which were supported by investigations. Some informants gave partly true and partly false statements; and some gave totally false statements that were credible and compatible with their background. The informants were genuinely afraid to appear at police headquarters and be tested because of the consequences if discovered by their associates.

In screening these 20 informants, the examiners were able to identify those whose stories were totally true, those whose stories were totally false, and those who told stories that were partly true and partly false. However, the examiners were not able in every case to correctly classify the individual items that were true or false, told by those informants who gave stories that were only partly true. Of seven subjects who told partly true stories, the examiners erred four times on the specific details of stories told by three of the informants. However, the examiners correctly identified 102 of 106 specific details of stories, for an accuracy of 96 percent; and were 100 percent correct in separating the truthful and lying informants.

In 1977 Correa and Adams, at the University of Georgia, simulated polygraph screening with 40 subjects. The tests consisted or three series of questions about information on a pre-employment data sheet. As in real screening, subjects who reacted to relevant questions were asked about these responses, and when appropriate, questions were rephrased and included in the next chart series.

The screening tests successfully identified all those who were completely truthful and all of those who were untruthful to one or more of the questions, for an accuracy of 100 percent. In regard to identifying the specific questions that subjects lied to, the accuracy was less than perfect. There were 180 specific lies told by the lying subjects with respect to items on their pre-employment data sheets. In addition, there were 60 control lies about a pre-employment interview, questions added as checks since some participants might not fully cooperate in truthfully answering questions on the pre-employment forms. One hundred and fifty (83 percent) of these questions were correctly identified as deceptive, and 30 (17 percent) were not. No truthful persons were called deceptive. The research had a secondary purpose, to decide if there was a difference in detectability of those with high motivation, a cash incentive, and those with low motivation. There was no difference in total detection of truthful and lying subjects, as that was 100 percent. There was a difference, in that the detection rate for specific lies was higher for motivated subjects, but the difference was not statistically significant. The technique was relevant-irrelevant, a technique which uses control questions.[2]

One of the theoretical questions raised about screening, and other applications of polygraph technique, is whether detection is above change when the subject is not emotionally involved. Some Laboratory evidence suggests that if the subject doesn't care, the detection rate might be reduced. Another question is whether they be detected at all. Hemsley, Heselgrave and Furedy at the University of Toronto in 1979 tested two groups of ten each, in which one group gave misinformation on parts of their biographical forms but no particular issue was raised about this. The other group was entirely truthful in filling out forms, and in both groups the stimulus intensity was minimal. The question was whether the autonomic nervous system, as measured by skin conductance, would show greater activity for those who were untruthful than those who were truthful. The results showed the skin resistance responses were significantly greater for deceptive responses than truthful responses.[3] The authors concluded that skin conductance could, in the laboratory, detect pure, unemotional deception.

An Army Intelligence Study, subsequently analyzed by Dr. Barkland, considered three different ways to read screening charts. The screening of 40 subjects employed a control question technique.[4] Three methods were used to evaluate the charts: A Zone method, a greatest control method, and a relevant-irrelevant method. The first two used a numerical system comparing relevant and control question responses. The latter considered the size and consistency of responses to relevant questions without direct comparison with control question reactions. Omitting inconclusive results, the zone method identified 81 percent of the deceptive persons and 75 percent of the truthful. The greatest control method identified 68 percent of the deceptive and 83 percent of the truthful. The relevant-irrelevant method identified 86 percent of the deceptive persons and 76 percent of the truthful.

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[2] All current relevant-irrelevant techniques use control questions, but are not classed as control question techniques because of a fundamental difference in evaluating the charts.

[3] S+2.28 UMHOs for deceptive, X+1.40 UMHOs for truthful. There was no habituation effect, nor was there a sex difference.

When responses were analyzed for individual questions (250 truthful, 30 deceptive), only the relevant-irrelevant method identified deceptive responses at greater than chance, the range being 54 to 69 percent. All of the methods were better than chance at identifying truthful questions, the range being 91 to 97 percent. The value of this search was in the variations resulting from different analytic approaches.

Another issue is to what extent can people be detected when they lie about personal details of their life, details they no not want to be detected. Is the act of deception of sufficent magnitude to be detected, as compared to the act of deception in denying a serious crime? In this experiment, there was an added complication, as the subjects were trained to confuse the examiner by producing false reactions. Dr. David Lykken of the University of Minnesota devised this experiment in 1960, in which 20 subjects were given practice in producing false electrodermal responses, with biofeedback reinforcement. Subsequently they were given a multiple choice-type test [5] in which correct biographical information was listed among five similar items of incorrect information. Only electrodermal recordings were made. The issue was whether the correct items could be detected from the incorrect items when the subject was actively trying to prevent that detection. There was a financial reward of ten dollars if they could defeat the test.

The personal information belonging to each subject was correctly identified by scoring the amplitude of eletrodermal response in each of the 20 cases. The detection was 100 percent, despite the countermeasures.

Edel and Jacoby studied the consistency with which ten experienced polygraph examiners read charts from screening examinations conducted at a federal agency. The examiners were required to determine whether there was or was not a significant physiological reaction in each of the three physiological channels, respiration, electrodermal and cardiovascular, following each question. They looked at all the charts in 40 cases. Those charts involved 2530 questions. Thus the examiners, reading the charts blind, made 7590 decisions. The original examiners for each of the 40 cases were also asked to score their charts blind (and long after they were conducted). The agreement between the original examiners and other examiners was 96 percent. The average agreement between the blind raters was 94 percent.

Lieblich and others at the Hebrew University of Jerusalem explored the effect of repeated presentations to subjects, and the ability to detect the subject's first name from among five. There were 58 subjects. The series of five names were repeated ten times, altering the sequence each time. There was a ten second interval between presentation of names, and only an electrodermal recording was made. The experiment was complicated by having high and low motivation groups and a subgroup among the high motivation group that attempted countermeasures. Chance was 20 percent.

Cumulative scoring (common to most polygraph formats) increased the detection rates for the 28 in the low motivation group from 60 percent on the first series to 90 percent. The high motivation group detection rate improved from 55 percent to 93 percent. The high motivation group that attempted countermeasures improved from 60 percent to 100 percent. The overall average improvement of detection was from 57 percent on the First series to 94 percent with cumulative scoring.

I have described these research projects in some detail to discredit the notion that there has been no research to validate the use of polygraph techniques applied to personnel screening.

In Regard to countermeasures, a well trained examiner will detect all of those common methods talked about on the street and published in popular books. Detecting and defeating countermeasures is part of our training in basic and advanced courses. Most of those so-called countermeasures do not even prevent the examiner from getting readable Charts. Among the few that do, the subject's attempts are readily apparent.

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[4] Although the polygraph technicique used for this research is not widely used for screening, the comparison of analytic techniques would not have been possible without it.

[5] Called a guilty-knowledge test.

Now it is obvious that truthful people do not engage in countermeasures where the test results are important to them. They want the examiner to succeed. The use and detection of those countermeasures which may prevent the examiner from getting charts that he can read is a sufficient basis for interrogation or further investigation. The practical consequences of detected countermeasures are the same as those test results indicating deception.

There is concern in the Government about highly sophisticated countermeasures which may involve lengthy training of selected persons. DOD and other agencies are not involved in planning long term research projects in those areas.

In addition to the research described in the DOD report, you should know that we have in DOD a numbr of research projects underway. There is a long term project, in its second year, developing a much improved instrument, including computer analysis of the physiological recordings. There are other projects looking at biofeedback as a means of enhancing polygraph techniques, and studies of countermeasures. There are several other research projects that will be sent out for bids soon. In addition, the National Security Agency and the Federal Bureau of Investigation are establishing a specially equipped joint research laboratory, staffed with psychophysiologists who are polygraph examiners. In additon to the two PhD examiners, there will be a laboratory assistant, staff examiners and clerical support. They will conduct research on new equipment, the development of improved techniques for specific issue and screening applications, and other technical matters of mutual interest.

The utility of the polygraph was addressed earlier in my testimony and also will be evident from the 50 polygraph cases described in the report prepared by the DCI Security Committee.

In addition, the DOD report on "The Accuracy and Utility of Polygraph Testing" gives more examples of the utility of polygraph testing. It describes cases where only the polygraph test gave us a lead into espionage cases: and it describes cases where innocent persons have been saved from trial, conviction, and even from jail because of polygraph tests. It describes how polygraph results compare with the results of background investigations, and the unique contributions made by both, plus the need for both methods, rather than one or the other. The report also compares the results obtained with interviewing without the polygraph, with the results obtained by interviewing supported by the polygraph. Last, the report describes all the major research conducted on polygraph validity, with a thorough analysis of the strengths, weaknesses and significance of that research.

Let me conclude on the most important point. We in the security and CI business must evaluate any program, including the polygraph, on the basis of its effectiveness in detecting or deflecting espionage. We at NSA have been saved from probable major problems by this invaluable tool. Both the DOD/NSA report and the Security Committee report contain summaries of such cases.

Some are not without ambiguity and I don't propose to recount all these cases here. Let me summarize just two cases from recent years:

A military person about to retire from active duty where he had access to sensitive compartmented information applied for a job with NSA. He had a clean record. He reacted to polygraph questions about espionage. He was confronted about these reactions. He said that only days before he had visited the Soviet Embassy in Washington to make arrangements to defect. The Soviets suggested he complete his processing for sensitive employment.

An applicant for employment at NSA reacted to espionage questions. He then admitted knowing and working with a foreign intelligence officer. He declined to give us details and he continued to react to the relevant counterintelligence questions.

This information could have been gained no other way—only our skilled polygraph examiners saved us from potential disaster.

I have every confidence in the polygraph as a valid technique and every confidence in the skill and intergrity of my polygraph examiners.

If you have any questions, I will be happy to answer at this time.

STATEMENT OF JAMES L. WILSON, NEW MEXICO GOVERNOR'S ORGANIZED CRIME PREVENTION COMMISSION

Mr. **Wilson**. Thank you for the opportunity to appear today.

New Mexico has a unique situation in using polygraph evidence, in routinely using polygraph examinations in criminal trials and over the objection of opposing litigants.

From this experience, 8 years now since the *Dorsey* case in 1975, has come some information that we feel highlights some of the problems that exist with regard to the use of polygraph examination.

It has not made the substantive contribution to the trial process that many hoped it would. We have received virtually free reign—I say we, the polygraph community in New Mexico has relatively free reign to introduce tests that were decidedly substandard.

In 1983, the Supreme Court issued a new rule of evidence that modified or at least established some guidelines for the consideration of polygraph evidence in a trial.

Even with that, it is still widely acknowledged by prosecutors and defense lawyers in New Mexico that the major utility of the polygraph is in the investigative context rather than in a trial context.

The Office of Technology and Assessment publication, "Scientific Validity of Polygraph Testing, a Research and Evaluation," [1] points out several variables that affect the accuracy levels of these tests; namely countermeasures which I feel are probably the most damaging to the continued use and effectiveness of this technique.

Police officers that I have tested when subjects of investigations themselves have demonstrated a fairly high propensity to attempt to countermeasure the test. I would say 15 to 20 percent of the officers that I have tested in specific investigations have attempted physically to countermeasure the examination.

Many of them told me that they used information they acquired by virtue of having used the polygraph tests themselves in conducting investigations.

At any rate, while inconclusive results may not be counted as outright errors, they certainly affect the utility of the technique because if a person wishes to lie and practice countermeasure, and produces an inconclusive result, of course, benefits to the extent that the lie is not detected.

There are also additional problems encountered in testing people who are ordered to undergo the examination. An examiner typically must reduce anxiety in a person to an acceptable level in order to maximize the probability of having a valid test.

The problems associated with anxiety reduction are exacerbated when a person is coerced into taking the test. In its worst scenario, anger can result in a false positive error.

To my knowledge, no research has ever addressed the effect of coercive testing of validity. The training, experience, skill, and integrity of the examiner are important variables to consider in assessing the validity of a test.

The Government's examiners are generally better trained and monitored than those in private practice. Nonetheless, it is still difficult to generalize accuracy rates to an entire examiner population.

To an undertermined extent, accuracy is an examiner-specific variable.

A fact not mentioned in the OTA assessment, but mentioned in the DOD publication, "The Accuracy and Utility of Polygraph Testing," is the extent to which accuracy is affected by the subjectivity of the issue.

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[1] Retained in committee files.

That is, we have found that the polygraph is well suited for testing for objective issues such as witnessable, physical events and not as well suited for testing for subjective issues such as states of mind, fear, formulation of intent, or the presence of fear as normally encountered in self-defense situations.

The technique is also not well suited, in my estimation, to test a person's conclusions and interpretations of events.

Subjective issues on one hand invite rationalization and on the other hand occasion some very severe soul searching.

In New Mexico courts, a great deal of case law is developing over the problems associated with rationalization in the trial process. We know that inconclusive rates certainly increase and we suspect error rates increase when examiners attempt to test for highly subjective issues.

This factor has never been addressed by research and I believe great caution is indicated in weighing the results of tests of this nature.

Senator LEVIN. Could you repeat that. Highly selective? I did not quite follow.

Mr. WILSON. What I said was that we know inconclusive rates are increased and we suspect error rates are increased when examiners tend to test for highly subjective issues. I believe great caution is needed, is indicated, in weighing the results of tests dealing with subjective topics.

The usefulness of polygraph technique as a screening device is well documented. It is almost always measured in the amount of the volume of information that is elicited from applicants and most examiners will acknowledge that applicants are more frequently disqualified because of their admissions to the examiner that they are because they have failed the so-called employment test.

So the polygraph technique is valuable, more as an adjunct to applicant interviewing, than as a diagnostic device in a screening context, in my estimation.

A 4-year experience we had in screening applicants for the State police found 40 to 50 percent were disqualified because of their own admissions or otherwise inappropriate behavior.

Investigative leads are, of course, developed through the polygraph examination, but the overwhelming majority of detrimental information developed about an applicant came through the polygraph interview. The Department took no adverse action against an applicant merely for producing unexplained reactions on the polygraph chart.

We did find a direct correlation between applicant naivete and willingness to make admissions against self-interest in the interview. That is, the less sophisticated the person was, the more willing he was to make admissions against self-interest.

I feel that the proliferation of polygraph examinations in the screening context is really more the result of their cost effectiveness than of the technique's validity.

I have observed in my statement, which I will submit for the record, if I might, Mr. Chairman, that the growing propensity to extend the polygraph beyond its utility follows the rule of the hammer which states: "Give a small boy a hammer and he will soon discover that everything needs hammering."

I will conclude with that, Mr. Chairman.

[The prepared statement of Mr. Wilson follows:]

PREPARED STATEMENT OF JAMES L. WILSON, DIRECTOR, NEW MEXICO GOVERNOR'S ORGANIZED CRIME PREVENTION COMMISSION

Mr. Chairman, Members of the Committee, thank you for inviting me to appear here today.

I am James Wilson. I am the Director of the New Mexico Governor's Organized Crime Prevention Commission. I have been working in the New Mexico Criminal Justice System for 23 years, serving as Director of Investigations for two Attorney's General, an officer of the New Mexico State Police and operator of a private polygraph firm. I have been licensed by the State of New Mexico as a polygraph examiner for 15 years, have conducted over 4,000 polygraph examinations in criminal cases, and testified as an expert on polygraph examinations in over 300 cases in New Mexico.

NEW MEXICO EXPERIENCE WITH POLYGRAPHIC EVIDENCE

New Mexico is unique in the United States in permitting, on a regular basis and over objection, expert testimony on the subject of lie detection. Since 1975, following *New Mexico* v. *Dorsey,* 88 N.M. 184, 539 P.2d 204 (1975) a case in which a non-stipulated polygraph examination was admitted over objection, New Mexico Courts have been increasingly faced with and often confused by testimony concerning polygraph testing.

Polygraph testimony has not made the substantive contribution to the trial process many hoped it would. Triers of fact are frequently confused by disputed polygraph testimony. The problems range from validity of the technique itself and qualifications of individual polygraph examiners to case specific issues such as the effects of a person's physical condition, the presence of drugs and the subjective nature of some test topics.

As the use of polygraph evidence evolved, trial courts were increasingly faced with polygraph examinations which were of questionable validity, improperly conducted and even occasionally misleading. With one major exception, the problems faced by New Mexico Courts are similar to those facing other jurisdictions considering the use of polygraphic evidence. New Mexico has accepted, at least tentatively, that underlying principles of polygraph testing are sufficiently sound for evidentiary consideration. Most arguments are now over the effect of variables on the accuracy to the technique and disputes between polygraph experts about whether a test was competently conducted.

In 1983, after the Polygraph Licensing Board failed to adopt regulatory guidelines, the New Mexico Supreme Court adopted a rule which provides minimum requirements for the evidentiary use of polygraph examinations. I appeared before members of the Rules of Evidence Committee, conducted a sample control question polygraph examination and responded to their questions about the polygraph technique.

On April 21, 1983, in a memorandum to Appeals Judges, District Court Judges, District Attorneys and the Chief Public Defender, the New Mexico Supreme Court adopted a new rule of evidence and issued the following caveat:

"Attached is Rule 707 [of the New Mexico Rules of Evidence for the District Court] that has been adopted by the Supreme Court for cases filed on or after June 1, 1983. The Court's adoption of this rule is in response to complaints and serious problems that we presently have in relation to polygraph testimony in New Mexico. We have adopted this rule on an interim basis in the hope that it solves that problem. If not, we will consider amending Ruie 707 in the future to specifically eliminate polygraph testimony in New Mexico."

It is widely acknowledged that the major utility of the polygraph technique is its value as an investigatory tool in the pretrial context. An unfortunate concomitant of its use as evidence at trials is its reduced use as an investigatory tool available to law enforcement. Prosecutors often discourage its use in the pre-referral stage of an investigation because of their fear of its adverse impact at trial. In an effort to assess the utility of the polygraph technique in this process, 14 prosecutors (the New Mexico Attorney General and 13 District Attorneys) and public defenders (the Chief Public Defender and 6 Assistant Public Defenders) were surveyed. Prosecutors and Public Defenders all agree that the polygraph technique is most valuable as an investigative tool. Results are divided almost equally as to its utility in the trial process, with 5 prosecutors saying it aided the trial process, 2 undecided and 7 who said it was of no value. Public Defenders were similarly divided with 3 saying it was of value, 3 saying it wasn't and 1 undecided. Prosecutors were split equally on whether to use polygraphic evidence as it is currently used in New Mexico or to require a stipulation for its use or not use it at all. Public Defenders favored its use under current guidelines at a ratio of 6 for and 1 against.

VALIDITY

New Mexico courts have not been treated to a a full foundational showing of validity for the polygraph technique. The *Dorsey* case stipulated to foundational validity and, as a result, no full showing has ever been required. The majority of evidence before New Mexico Courts is to the effect that the control question technique when properly employed by an experienced, competent examiner, achieves accuracy levels in excess of 90 percent, excluding inconclusive results. Many variables, however, influence the accuracy of the examination as is pointed out in the technical memorandum, "Scientific Validity of Polygraph Testing, a Research and Evaluation," by the Office of Technology Assessment (OTA). To the best of my information, practically all cases in New Mexico Courts have involved the control question test and no cases have involved the preemployment screening test, the periodic or aperiodic screening test, or the concealed information test. Because the control question test is the technique of preference for the New Mexico examiners in criminal cases, only one case has involved the relevant-irrelevant test.

Of the variables cited in the OTA assessment, Chapter 6, p. 83, the most deleterious to the utility of the polygraph technique is the use of the countermeasures by a deceptive subject. More specifically, physical countermeasures present a major threat to modern use of the control question test. The inducement of pain, the application of muscle pressure as well as other efforts to distort autonomic responsivity, account for a large percentage of inconclusive test results and probably a number of false negative errors.

Police officers, when they are the subject of investigations themselves, have demonstrated a comparatively high propensity to engage in physical countermeasures. I estimate that 15 to 20 percent of the police officers I have tested in specific investigations who were acting under orders and faced disciplinary actions for failure to comply, physically attempted to countermeasure the test. Several of them told me they attempted to countermeasure the test using information acquired through their professional use of polygraph examinations in conducting investigations. In any event, with simple training it is not difficult to render a control question polygraph examination inconclusive. While inconclusive results may not be counted as outright errors, the utility of the technique in conducting investigations is certainly reduced. That is, a person who wishes to lie and practices a countermeasure that produces an inconclusive result is benefited to the extent that the lie was not detected.

Additional problems are encountered in testing people who are ordered to undergo examination. An examiner must normally reduce anxiety to acceptable levels to maximize the probability of conducting a valid test. The problems associated with anxiety reduction are exacerbated when an examinee is coerced into the test. In its worst scenario, anger can result in a false positive error. No published research has addressed the effects of coercive testing on validity.

The training, experience skill and integrity of the examiner are important variables to consider in assessing the validity of a particular polygraph examination. The government's examiners are generally better trained and monitored than those in private practice. Nonetheless, it is difficult to generalize accuracy rates to an entire examiner population. To an undetermined extent, accuracy is an examiner specific variable. There are widely varying levels of skill and competence in the polygraph field.

A factor not specifically addressed by the OTA assessment, but mentioned on page 59 of the Department of Defense 1984 publication, *"The Accuracy and Utility of Polygraph Testing,"* has been highlighted from our experience with the polygraph technique in its adversarial treatment by the typical trial process. That factor is the extent to which accuracy is affected by the subjectivity of the issue, i.e. we have found that the polygraph technique is best suited for objective issues, such as witnessable, physical acts. The technique is not as well suited for subjective issues, such as states of mind, the formulation of intent, or the presence of fear as normally encountered in self-defense situations. The technique is not well suited to test a person's conclusions and interpretations of events. Subjective issues invite rationalization on one hand and occasional soul searching on the other. Polygraph examiners are trained to construct questions which minimize rationalization.

New Mexico Courts have continually tried to deal with rationalization. In *New Mexico* v. *Brionez*, 91 N.M. 290, 295, 573 P. 2d 224 (Ct. App. 1977) New Mexico Court of Appeals said, inter alia:

"Two relevant questions used the words 'did you force'. Questioned concerning the use of the word 'force' in a relevant question, the operator testified that one could never be sure of excluding rationalization on the part of the examinee. The operator also testified that if the examinee does not perceive the question as a threat, the reaction would be less; that the test measures the way the examinee "sees things". In asking defendant whether he used force, the question asked for defendant's view of force. Such invites rationalization. The trial court ruled the relevant questions, discussed above, were invalid because of the ease with which reponses could be rationalized. The trial court could properly reach this conclusion."

See also, *New Mexico* v. *Session*, 91 N.M. 381, 574 P. 2d 600 (Ct. App. 1978); *New Mexico* v. *Gallegos*, 92 N.M. 370, 588 P. 2d 1045 (Ct. App. 1978); and *New Mexico* v. *Anthony*,—N.M.—,—P.2d ——, N.M. St. B. Bull. 88 (No. 4 Jan. 26, 1984) (Ct. App. 1983).

Inconclusive and suspected error rates increase when examiners attempt to test for highly subjective issues. This factor has never been addressed by any published research. Great caution is indicated in weighing the results of tests of this nature.

PREEMPLOYMENT AND EMPLOYMENT SCREENING

The usefulness of the polygraph technique as an employment screening device is almost always measured in the volume of adverse information elicited from the subject rather than in its accuracy as a diagnostic device. Most examiners acknowledge that applicants are more ofter disqualified because of their own admissions to the examiner than because they "failed" an employment test. The polygraph technique is more useful as an adjunct to applicant interviewing than as a pure diagnostic device.

A four year experience in screening applicants for the New Mexico State Police found that 35 to 50 percent were disqualified because of their own admissions of criminal or otherwise inappropriate behavior. Investigative leads were developed through the testing process and assigned to background investigators. The overwhelming majority of detrimental information regarding an applicant's background was adduced through the polygraph examination and not through the background investigation. The department appropriately took no adverse action against an employee or prospective employee merely for producing unexplained reactions on a polygraph chart. The experience identified a direct correlation between subject naivete and a willingness to make admissions against self-interest.

The proliferation of polygraph examinations in the employment screening context is due more to their cost effectiveness and utility than because of the technique's validity.

The growing propensity to extend the polygraph beyond its utility follows the "Rule of the Hammer" which states: "Give a small boy a hammer and he will soon discover that everything needs hammering."

At this point I would respond to any questions the Committee may have.

Chairman TOWER. Thank you, Mr. Wilson.

Dr. Saxe?

STATEMENT OF LEONARD SAXE, PH.D., BOSTON UNIVERSITY

Dr. SAXE. Thank you, Mr. Chairman.

I am pleased to appear this morning to discuss the scientific validity of polygraph testing.

I would like to include my full statement in the record.

Chairman TOWER. We will incorporate your full statement. You may summarize as you see fit.

Dr. SAXE. I am a psychologist on the faculty of Boston University. I was principal author of the Congressional Office of Technology Assessment's report on the scientific validity of polygraph tests.

With your permission, I would like to have the report be made a part of the record.

Chairman **Tower**. That will be incorporated in the record.

[The Office of Technology Assessments Report, Scientific Validity of Polygraph Tests, retained in committee files.]

Dr. **Saxe**. It is not difficult to understand why polygraph testing has been embraced by so many who are concerned with national security.

Technology that purports to determine if people are trustful has obvious applications and obvious importance. Yet, although lie detecting technology might be desirable, one should not be deceived by the desire to have such a technology and by the fancy gadgetry it employs.

My colleagues and I have conducted what is probably the most objective scientific review of the use and accuracy of polygraph tests. This review yielded no convincing evidence that polygraph tests work in the way that accurately assesses an individual's honesty.

My professional conclusion is that employment of so-called lie detector tests is likely to lead to a decrement in security of classified information rather than enhanced security.

Use of polygraph tests may lead to false identification of innocent individuals, and, more importantly, the failure to identify individuals who engage in espionage. Since the premise must be a concern with national security and maintenance of classified information, analysis strongly suggests you should halt use, and particularly expansion, of polygraph tests.

I would like to make three sets of points.

The first has to do with what is a polygraph test. Let me start by saying that it is incorrect to refer to a polygraph as a lie detector. The polygraph, as Mr. Ansley demonstrated, records simply physiological reactions: breathing, heart rate, and perspiration.

The physiological measures used in a polygraph test do not directly indicate an individual's deceptiveness since lying produces no unique physiological response.

A polygraph test is probably more accurately described as a method of interrogation. The original form of polygraph testing is the relevant-irrelevant examination called the R/I test. Physiological recordings are made in response to the questions relevant to the investigation. These are compared with responses to questions about irrelevant issues. A variant of the R/I test is used in almost all screening situations.

Another type of examination, the control question test, is the basic form of polygraph testing used when a specific incident is being investigated. A CQ test includes questions designed to be arousing, you might say embarrassing, even to innocent subjects. Such tests are scored by comparing responses to these control questions with responses to relevant questions. At least in theory, such tests control the anxiety that a subject may have about the examination. President Nixon once said, "I don't know how accurate polygraphs are, but I do know they will scare the hell out of people." In fact, President Nixon was probably more accurate than he realized. Since no specific physiological reaction to lying exists, a polygraph test depends on making a subject fearful of being caught in a lie.

How fearful a person is will determine whether or not he or she is detectable. A polygraph test functions much like a placebo does in medical practice. The examination is effective only to the extent the subject does not understand the nature of the technique.

Let me turn to a brief discussion of research evidence. Although there is substantial anecdotal and case study information about polygraph tests available, less than 50 studies can be considered scientific investigations of polygraph testing. Most of this research has been conducted not in actual situations where polygraph tests are employed, but in laboratories and other so-called analogue settings.

The paucity of scientific research is even more striking when one considers that there is virtually no evidence for the validity of R/I tests, those used in screening examinations. No field studies are available to validate the accuracy of these tests and there have been only a few analogue studies of such screening examinations. The only one of these studies done in counterintelligence contact was conducted by Dr. Barland and yielded errors with individuals not trained in countermeasures in excess of 20 percent.

Some research evidence exists about CQ tests in investigations of specific incidents. Much of this evidence is confounded by a host of factors that make interpretation almost impossible.

Only 10 studies of actual field use of CQ tests meet requirements for valid scientific research. These studies have serious flaws in their research design that limit the inferences that can be drawn. The studies only use cases where actual guilt or innocence can be independently established and use types of cases, for example, sexual assault and drugs, that are not representative of counterintelligence investigations.

There is also a problem in these studies of base rate, the ratio of the number of guilty subjects to the number of innocent subjects. The base rate is an important factor in the accuracy of polygraph examinations because the likelihood of correctly identifying the guilty subject increases as the base rate of guilt increases.

Most field studies, as well as analog studies were designed with a base-rate guilt of 50 percent. Yet in the national security investigations the rate of deceptive individuals will, we hope, be much lower than 50 percent. At the same time a large proportion of innocent subjects would make it more likely that many of them would be incorrectly called deceptive.

Analog studies of the CQ test avoid some of the difficulties of field studies, but at the cost of studying situations and subjects that may themselves be inapplicable to the use of polygraphs in DOD.

These studies typically engage samples of college students in mock crimes that are arranged by the research investigators. The results of these studies vary widely and, though useful for basic research purposes, does not increase confidence in the actual accuracy of polygraph tests.

I should make two brief comments about the nature of my conclusion from available research.

Polygraph proponents have labeled scientific researchers such as myself as Johnny-come-lately professors. I must plead guilty this morning to not having a longstanding interest in polygraph tests and as being proud of my skeptical scientific orientation.

I should note that the conclusions of my analysis, however, have not been directly challenged. For example, Mr. Ansley, in an earlier version of the report he submitted for the record this morning, notes: "The polygraph field is one of those rare situations where the practice has outpaced the research."

Although they [Garwood and Ansley] contend that available research indicates accuracy results that are significantly better than chance, he adds: "It is not possible to estimate the true accuracy of the polygraph in DOD," and that "A great deal of Government polygraph usage involves screening, but there is little evidence on the accuracy of the polygraph in screening situations."

Other Government experts share our skepticism of polygraph tests even for a specific incident examination. In an FBI research proposal, Dr. John Podlesny, FBI's polygraph research specialist, notes: "The ability to generalize the laboratory results to field settings is limited. A number of field studies have been conducted on control question techniques, but all of them employed methodology which was weak."

Government polygraph proponents seem willing to admit scientific evidence is lacking, but they claim the technique has utility. Numerous cases can be documented of individuals who have been identified as being deceptive through polygraph tests. I do not doubt that such data are accurate and that in fact information at some time has been gleaned from polygraph tests that would otherwise not have been obtained.

The relationship of this information to the polygraph test itself, however, must be established and one must understand why it seems to have been useful.

Two points:

One, the mechanism by which polygraph tests gain information is fear. As long as individuals are both afraid of polygraph tests and believe that the test can detect lies, they may show highly aroused reactions to questions on which they lie.

If these conditions are not met, the test may have little validity.

Second, I should note that utility data are anecdotal information. Faith healers can document cases of having cured individuals of various illnesses, but we probably would not want to alter our medicaid program to reimburse faith healing. So, we must be cautious about data on polygraph which has not been selected using appropriate scientific controls.

I am pleased to learn that some of the most problematic aspects of recent Defense Department proposals for polygraph testing, principally the large-scale screening of DOD employees have been withdrawn.

Nevertheless, DOD currently uses polygraph tests for both screening and specific incident investigations. As General Stilwell testified, DOD will expand that use. Screening uses of polygraph tests have not been validated. Although they may intimidate personnel who are withholding information to be more forthright, it is not clear what else will be accomplished by these tests.

I am concerned that DOD regulations and current policies place polygraph testing in a critical position vis-a-vis security worthiness. If a decision is being made to restrict polygraph tests to those cases where security is most crucial, then I believe a very serious error is being made.

My concern about the national security uses of polygraph testing is not based only on theoretical analysis which suggests that the mechanism is fear of detection arousal, but also on the basis of empirical research. A number of recent studies suggest that active countermeasures may be effective in some cases in beating the polygraph examination.

It is a reasonable assumption that those agents who are the most dangerous to our national security are also the ones most likely to be instructed in the use of the most effective countermeasures against the polygraph examination. Subtle body movements, hypnosis, biofeedback, and drugs have been shown to decrease polygraph accuracy. Given that accuracy depends on the subject believing in the technique, maintaining a disbelief in the examination may be the most effective countermeasure. A clear statement of the effective countermeasures is not possible at this point.

Theoretical analysis suggests lie detection is impossible. Empirical evidence either does not exist to support the accuracy of polygraph tests or is subject to multiple interpretation. Although some evidence of validity is available this evidence is in situations far different from those relevant to national security. It seems wholly inappropriate to expect that experience with polygraph tests in criminal investigations of personal and property crimes would enable us to generalize to our national security.

Our security concerns seem to me too important to be dealt with by a technology whose validity has not been established.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Saxe follows:]

PREPARED STATEMENT OF LEONARD SAXE, PH.D., BOSTON UNIVERSITY

Mr. Chairman and Members of the Committee: I am pleased to appear this morning to discuss the scientific validity of polygraph testing. I am a psychologist on the faculty of Boston University and was the principal author of the Congressional Office of Technology Assessment's (OTA) report on the validity of polygraph tests. I am a research psychologist and author of a number of books and monographs dealing with research methodology and the evaluation of educational and health technologies. With me is my colleague from Boston University, Theodore Cross, who assisted in development of the OTA polygraph study. We appear today as independent scientists at the request of the American Psychological Association, to discuss the implications of our scientific analysis of polygraph testing for the Department of Defense. This statement does not necessarily represent the views of the American Psychological Association, which has no official policy on the use of polygraphs. If not already a part of the hearing record, I would like to request that the OTA report on the Scientific Validity of Polygraph Testing be incorporated into the record.

It is not difficult to understand why polygraph testing has been embraced by so many individuals within and outside of government who are concerned with national security. A technology that purports to determine if people are truthful has obvious applications and obvious importance for the nation. Yet, although "lie detecting" technology might be desirable, one should not be deceived by the desire to have such technology and by the fancy gadgetry it employs.

My colleagues and I have conducted what is probably the most objective scientific review of the use and accuracy of polygraph tests. Our study was a comprehensive analysis of every available shard of scientific evidence about polygraph testing. This systematic review yielded no convincing evidence that polygraph tests work in the way that proponents claim. Nor did the results of this analysis indicate that polygraph tests work in a way that accurately assesses an individual's honesty.

Beside the fact that little scientific evidence exists about the validity of these tests, much of the available evidence suggests serious problems with their use—especially in national security applications. My professional conclusion is that employment of so-called lie-detector tests is likely to lead to a decrement in security of classified information rather than enhanced security. Use of polygraph tests may lead to the false identification of innocent individuals and, more importantly in this situation, the failure to identify individuals who engage in espionage. Since the premise must be a concern with national security and the maintenance of classified information, our analysis strongly indicates that you should halt use, and particularly expansion, of polygraph tests.

NATURE OF TESTS

It is incorrect to refer to a polygraph as a "lie detector." The polygraph is an instrument used to record simple physiological reactions. These reactins include, in a typical polygraph examination, breathing, heart rate, and perspiration. The physiological measures used in a polygraph test measures do not directly indicate an individual's deceptiviness, since lying—as far as we know—produces no known unique physiological response. A polygraph test is more accurately described as a method of interrogation. It encompasses various ways to structure and ask individuals questions about past events and to assess their physiological reaction in response to these questions.

Several different types of polygraph tests exist and it is important to differentiate among them. Tests differ based on the type of questions asked and the way in which the resultant charts are scored. One type of test, the original form of polygraph testing, is the relevant/irrelevant examination, called the R/I test. In an R/I test a subject is asked a series of questions relevant to his or her background, or to a particular situation. Physiological recordings are made and responses to questions about relevant issues are compared with responses to questions about irrelevant issues in order to detect deceptiveness. A variant of the basic form of this examination is used in almost all screening situations where individuals are asked a broad range of questions about their past honesty.

Another type of examination is the control question test, called the CQ test. The CQ test is the basic form of a polygraph examination used when a specific incident is being investigated. In such situations, one questions individuals about whether they have knowledge of, or were involved in, a specific event. In addition to relevant and irrelevant questions, a CQ Test includes questions designed to be arousing even to innocent subjects. Such tests are scored by comparing responses to these control questions with responses to relevant questions. At least in theory, such tests control for the anxiety that a subject may have about the examination.

Former President Nixon once said, "I don't know how accurate [polygraphs] are, but I do know that they'll scare the hell out of people." In fact, President Nixon was more accurate than he probably realized. Since no specific physiological reaction to lying exists, a polygraph test depends heavily on making a subject fearful of being caught in a lie. How fearful a person is will determine whether he or she is detectable. Polygraph tests include a variety of procedures designed to make a subject think that the test is valid. A polygraph test functions much like a placebo does in medical practice. The examination may be effective only to the extent that the subject does not understand the nature of the technique.

RESEARCH EVIDENCE

Systematic research on the validity of polygraph testing is relatively recent. It is thus not surprising that inadequate evidence exists. Although substantial anecdotal and case study information about polygraph tests is available, only a small number of studies (less than 50) can be considered scientific investigations of polygraph testing. Most of this research has been conducted, not in actual situations where polygraph tests are employed, but in university laboratories and other so-called analogue settings. There are no more than 10 or so minimally adequate field studies of polygraph testing validity.

The paucity of available research is even more striking when one considers the validity of specific polygraph techniques. Thus, there is virtually no evidence for the validity of R/I tests—those used in screening examinations. No field studies are available to validate the accuracy of these tests, and there have been only a few analogue studies of such screening examinations. Although screening is the most frequent use of polygraph testing and its use accounts for approximately one-third of the total number of examinations reported by federal agencies in 1982 (almost entirely by the National Security Agency), there is no evidence of the accuracy of polygraph in this setting.

Some research evidence exists about CQ tests used in investigation of specific incidents. Much of this evidence, however, is confounded by a host of factors that make interpretation almost impossible and weaken the ability to be generalized to DoD applications. Only 10 studies of actual field use of CQ tests have been conducted that meet requirements for valid scientific investigations. These studies have serious flaws in their research design that limit the inferences that can be drawn.

The principal difficulty in assessing the accuracy of CQ tests, based on current field studies, is in how these investigations determine "ground truth"—the actual guilt or innocence of the subjects. To assess accuracy, an independent determination of examinees' guilt or innocence needs to be established against which the results of the polygraph test can be measured. Judicial outcomes, one such independent standard, are inaccurate for a number of obvious reasons. Some studies have used a panel of legal experts who make assessments of guilt or innocence based on investigative files, but there is no way of knowing if these decisions are correct. Confessions have also been used as a criterion of ground truth, but they too are not necessarily valid and they may occur during or depend on the polygraph examination. Also, only a select sample of examinees may confess. Thus, it has been difficult to develop an accurate standard against which to assess polygraph testing without making the polygraph situation studied unrepresentative of its general use.

Representativeness is also a significant concern with regard to the type of situations included in current field studies of the CQ Test. None of the studies included counter-intelligence activities and only two of the investigations involved military personnel. The majority of crimes tested by available field studies were criminal incidents and involved sexual or drug abuse. To generalize from polygraph examinations of these types of crimes to crimes concerning national security seems an unjustified leap of inference.

Furthermore, there is the problem of base rate—the ratio of the number of guilty subjects to the number of innocent subjects. The base rate is an important factor in the accuracy of the polygraph examination, with the likelihood of correctly identifying a guilty subject increasing as the base rate of guilt increases. Most field studies, as well as analogue studies, were designed with a base rate of guilt of 50%, and their results, at least in part, are probably dependent on this base rate. Yet, in national security investigations, the rate of deceptive individuals will be much lower than 50%, making detection significantly more difficult. At the same time, the large proportion of innocent subjects would make it more likely that many of them would be incorrectly called deceptive. A hypothetical example illustrates this problem. Assume that 900 of a particular group of 1000 examinees are innocent. Even if the error rate is only 5%, given the low base rate of guilt in this group, 45 innocent people are likely to be called deceptive.

Analogue studies of the CQ Test avoid some of the difficulties of field studies, but at the cost of studying situations and subjects that may themselves be inapplicable to the use of the polygraphs in the DOD. These studies typically engage samples of college students or community volunteers in "mock" crimes arranged by the research invesitgators. Half of the the subjects are usually assigned to a guilty role and half to an innocent role, and subjects are examined after the commission of the "crime." The results of these studies vary widely and, though useful for basic research purposes, do not increase confidence in actual accuracy of polygraph tests.

OTHER REVIEWS

Polygraph proponents have labeled scientific researchers such as myself as "Johnny-Come-Lately Professors" who have no sense of the importance of polygraph testing and no in-depth knowledge of the techniques. I plead guilty to not having a long-standing interest in polygraph testing and as being proud of my scientific orientation. In science, it is appropriate to project skepticism about any claims of technological efficacy and subject them to rigorous analysis. Such skepticism should be welcomed—along with the objectivity that results from not being a user of polygraph tests.

I should also note that the conclusions of my analysis have not been directly challenged even by the most vocal proponents of polygraph testing—those in government and outside who are part of the professional polygraph community. For example, Marcia Garwood and Norman Ansley of the National Security Agency, in a Defense Department report developed in response to the OTA monograph, note that: "The polygraph field is one of those rare situations where the practice has outpaced the research." Although they contend that available research indicates accuracy results that are significantly better than chance, they admit that "It is not possible to estimate the accuracy of the polygraph in DOD * * *" and that "a great deal of government polygraph usage involves screening, but there is little evidence on the accuracy of the polygraph in screening situations."

Other government experts share our skepticism of polygraph tests, even for specific incident examinations. In a research proposal forwarded to the Office of Technology Assessment by FBI Director William H. Webster, Dr. John Podlesny (FBI's polygraph research specialist) included the following comment: ". . . the ability to generalize the laboratory results to field settings is limited . . . A number of field studies have been conducted on control question techniques, but all of them employed methodology which was weak * * *" Dr. Podlesny proposes a series of studies which would enable the FBI to establish the actual validity of polygraph tests.

Government polygraph proponents seem willing to admit tht scientific evidence is lacking, but they claim that the technique has "utility." Numerous cases can be documented of individuals who have been identified as being deceptive through polygraph tests. I do not doubt that such data are accurate and that, in fact, information has sometimes been gleaned from polygraph tests that would otherwise not have been obtained. The relationship of this information to the polygraph test itself, however, must be established and one must understand why it seems to have been useful.

1. The mechanism by which polygraph tests gain information is fear. As long as individuals are both afraid of polygraph tests, and believe that the test can detect lies, they may show highly aroused reactions to questions on which they lie. If these conditions are not met, the test may have little validity. In addition, since arousal can occur for various other reasons, it is never clear whether fear of detection or some other reason is responsible for arousal reactions.

2. It should be kept in mind that utility data are anecdotal information. Faith healers can document cases of having cured individuals of various illnesses, but we would probably not want health insurance policies to reimburse faith healing. So too, we must be cautious about data on polygraphs which has not been collected using appropriate scientific controls.

IMPLICATIONS

I am pleased to learn that some of the most problematic aspects of recent Defense Department proposals for polygraph testing, principally the large scale screening of DOD employees, have been withdrawn. Nevertheless, DOD currently uses polygraph tests for both screening and specific incident investigations. My understanding of General Stillwell's recent testimony before the House Committee on Post Office and Civil Service is that these uses will continue and, in fact, will be expanded.

Screening uses of polygraph tests have not been validated. Though they may intimidate personnel who are withholding information to be more forthright, it is not clear what else will be accomplished by these tests. I am concerned that DOD regulations and current policy place polygraph testing in a critical position vis-a-vis security worthiness. If a decision is being made to restrict polygraph tests to those cases where security is most critical, then I believe a very serious error is being made. The decision against employing polygraph tests should not be made solely on the bases of their intrusiveness or other distasteful features. Rather, it should be recognized that we run considerable risk of making incorrect decisions if they are used.

My concern about the national security uses of polygraph testing is based not only on theoretical analysis which suggests that the mechanism is fear-of-detection arousal, but also on the basis of empirical research. A number of recent studies suggest that active countermeasures may be effective in some cases in "beating" the polygraph examination. It is a reasonable assumption that those agents who are the most dangerous to our national security are also the most likely to be instructed in use of the most effective countermeasures against the polygraph examination. Subtle body movements, hypnosis, biofeedback and drugs have each been shown to decrease polygraph accuracy. Although a clear statement about the effects of particular countermeasures is not possible at this point, current research should temper confidence in polygraph testing.

Given that the accuracy of a polygraph examination depends on the subject believing in the technique, maintaining a disbelief in the examination may be the most effective countermeasure. At least one study clearly suggests this conclusion. Furthermore, there is now considerable evidence that, with both information and training about polygraph tests, it is possible to deceive a polygraph examiner. We must operate on the assumption that those intent on violating the security system of the Defense Department will have access to such information.

Theoretical analysis suggests that "lie detection" is impossible. Empirical evidence either does not exist to support the accuracy of polygraph tests, or is subject to multiple interpretation. Although some evidence of validity is available, this evidence is in situations far different than those directly relevant to national security. It seems wholly inappropriate to expect that experience with polygraph tests in criminal investigations of personal and property crimes would enable us to generalize to our national security. Our security concerns are too important to be dealt with by a technology that is so problematic and whose validity has not been established.

Thank you for providing me this opportunity to share my views with the committee. I would be pleased to answer any questions.

Chairman TOWER. Thank you.

Dr. Raskin?

STATEMENT OF DAVID C. RASKIN, PH.D., UNIVERSITY OF UTAH

Dr. RASKIN. Thank you, Mr. Chairman.

I would like to express my appreciation for the opportunity to appear before this committee.

I have submitted a lengthy statement for the record. I will just try to summarize some of the high points.

I am a psychologist and professor of psychology at the University of Utah. I have been doing scientific research and teaching on human psychophysiology with results in an application called polygraph techniques.

I have been doing scientific research on those polygraph techniques for the last 14 years with funding by the Departments of Justice and Defense and am a licensed polygraph examiner.

I train polygraph examiners, I have served as consultant to a number of Federal agencies. I served on the National Advisory Panel of the study which Dr. Saxe conducted.

I must say I don't agree entirely with the conclusions and findings expressed by Dr. Saxe, but I would agree that it is a very comprehensive and useful report.

Today I am testifying at the request of the American Psychological Association which has no official policy with regard to polygraph techniques and, therefore, any comments I make are my own and not necessarily representative of their views.

The directive at issue here has a number of issues that need airing: Scientific issues, applied issues, policy and social issues, questions of training of and competence of Government polygraph examiners, problems of national security which must be balanced against problems of protection of individual rights of citizens and employees and questions of public oversight and regulation.

I would like to hit some of the high points.

First of all, the scientific issues have been discussed and are covered in the statements submitted to you, but I would like to make a few comments.

In my opinion, there are two basic ways to estimate what I consider to be a reasonable range of accuracy. One has to do with the study which I think represents approximations of the accuracy on the high end. Those are the simulated crime studies which Dr. Saxe referred to, and on page 10 of my testimony I have summarized those results.

Essentially, they indicate an accuracy of approximately 95 percent in specific incident investigations.

On the other hand, the OTA study identified 10 field studies which show an accuracy rate somewhere between 80 and 90 percent. So, we are talking about a range somewhere in that ballpark, I think.

It should be pointed out that the errors are predominantly false, positive errors. In all the literature that is available, that is a consistent finding: that is, identifying innocent or truthful people as deceptive according to the polygraph test.

The second major problem that needs consideration is the countermeasures problem. The problem of whether or not people can beat the test.

Our own research, which I feel is perhaps the most extensive in this area, although it is most recent, shows there is a potential problem of people being trained to beat the polygraph test by subtle and difficult to detect physical maneuvers.

It becomes especially troublesome when one considers that our adversaries have the resources and probably the knowledge to train people to do this. We don't know exactly how successful they might be.

We have an urgent need for more research. The National Security Agency has a program to produce research as well as the Army program in which I am involved, although I understand there is some question about continuing the funding of that program.

I would like to turn to the problem of screening employees and aperiodic testing. There is no meaningful research on the use of polygraph techniques in screening employees or aperiodic tests in the actual applied situation. There are no field studies.

There are additional problems when one compares the applications in screening and in specific investigation. In screening there is no specific event that is under investigation. People's future intentions are being assessed. The test tends to be more of an involuntary and coercive nature.

Again, there is very little research on the latter point, no good data. There are theories, reasons to believe that a coercive situation is going to produce more problems than a voluntary one such as you have in the formal sense in criminal investigations.

But there is no set of data which can answer the question. More research is needed there.

A more important problem is the problem referred to as the base rate problem. This has to do with the accuracy of the test as a function of the prevalence of what it is you are trying to identify.

This is true whether you are talking about a test for cancer, whether you are talking about a psychiatric diagnosis.

If you have a 50-50 split between guilty and innocent people, then the accuracy of the research gives us a reasonable approximation for the research findings, gives us a reasonable approximation of the accuracy of the test in any specific instance.

Once you depart from that 50-50 split, then the problem becomes serious and the accuracies or the confidence that we have in the test outcomes are not clearly related to the accuracy of the test.

I have in my testimony prepared a table on page 22 which shows very clearly with straightforward calculations that even if you take the highest accuracy estimates, the ones from the laboratory studies which show the 97 percent detection of guilty people and 92 percent identification of innocent people or if you take the OTA range of accuracy, the 89 percent on guilty and 80 percent correct on innocent people; if you have a high base rate of lying or guilt in the population, then you have a very high confidence in the deceptive outcome.

But when you have a low base rate, very few people actually lying, then the problem becomes very serious with regard to confidence in the deceptive polygraph test outcome.

If we adopt, for example, a 1-percent rate of lying among people who will be taking tests in the DOD proposed program, the confidence in a deceptive outcome is at maximum 11 percent.

That means that 9 out of 10 people, approximately, who are identified as liars will be incorrectly classified. That is a very serious problem.

I did some calculations from General Stilwell's testimony and according to these figures, as many as 2,000 people a year in the proposed program would be incorrectly identified as deceptive when in fact they were telling the truth.

I think that represents a very serious problem. We don't have good data on estimating base rates. We need more information there. I don't believe that the data we have so far are sufficient.

When you extend this into the applications to civilian employees of civilian contractors, you compound the problem.

Let me turn to the problem of training and competence of polygraph examiners. The polygraph examination is a subtle and complex psychological test.

In my opinion, and I have had a great deal of contact with Federal examiners and Federal agencies, the training and qualifications of many Federal examiners are deficient.

Many of them come from law enforcement backgrounds and backgrounds of interrogation. They do not have the requisite psychological, physiological, and scientific sophistication to cope appropriately with this very subtle and demanding psychological technique.

They often think polygraph examination results are direct indicators of deception. The Army school at Fort McClellan is the basic course that trains the Federal polygraphers. In my opinion, that course is inadequate in many respects.

The staff, in my opinion, is not well qualified. They consist basically of expolygrapher examiners with no formal training in psychology or science.

I have recently carefully examined their training materials. I believe that they are often in many important areas 20 years behind the state of the art. They do not seem to be eager to participate in research with the academic or scientific community.

Similar problems occur with regard to the former Department of Justice proposal because the FBI has been the responsible agency there and they have similar problems in the training and qualifications of their examiners.

They have shown resistance to research and participation with outside agencies, both within the Federal sector and in universities.

There are some exceptions I should note. The Secret Service, for example, in the Treasury Department has an excellent program, very extensive training, high degree of quality control, eager to participate in research and to have outside evaluation, but they are the exception, not the rule.

There is no regulation outside these agencies of the performance and training of polygraph examiners and they are able to circumvent State license requirements when they come into the State because they conduct their examination on Federal reservations.

There is no current oversight by the Congress or public of the performance of polygraph examiners in the Federal sector.

When we turn to specific proposals, I would agree that there are many safeguards in the proposals and the restrictions that have been placed on them in the range of application, I think have improved the proposals, especially the recent modifications.

But there are some problems that I think need emphasis. One cannot rely on polygraph examinations as the sole basis for action. One needs other information.

The ploygraph technique is best in specific investigations and it does often lead to resolution.

For example, the Secret Service in fiscal year 1983 conducted 69 intelligence examinations which had to do with threats against Government officials. They had a 95-percent rate of confessions following deceptive test results. That is a very useful technique.

When one turns to screening on a large scale, the present proposal has serious problems, the problems of false positives, low base rates, possible countermeasures by spies.

Furthermore, I think the problem of protection of individuals is a serious one. Although there are written safeguards in the directive, there are problems of adverse actions which can result from a deceptive polygraph test such as an open-ended investigation which goes way beyond the original intent of the polygraph examination, damage to a person's career, morale, and productivity.

I think the NSA study which is described in the report of their people's reactions to polygraph examination is naive. The results are totally uninterpretable because of the way the study was done.

I think more psychological sophistication would have prevented that kind of interpretation. I think we need more research and cooperation in these areas. Only a fraction of 1 percent of the cost of these programs goes into research and study.

I think we need to upgrade the competence and training of examiners in the Federal sector. They need more scientific sophistication, and they need to overcome their resistance to participate in such a program.

Finally, I believe the Congress should consider seriously a program of oversight procedures which would involve some regulation and licensing of Federal polygraph examiners where the public would have an opportunity to make inputs and observe their performance to promote upgrading of their performance and training.

Thank you very much for this opportunity.

[The prepared statement of Dr. Raskin follows:]

PREPARED STATEMENT OF DAVID C. RASKIN, PH.D., UNIVERSITY OF UTAH

I wish to begin by thanking the Chairman and Members of the Armed Services Committee for this opportunity to present information regarding the important issues raised by the President's National Security Decision Directive-84, proposed revisions to the Department of Defense Directive 5210.48, and recent revisions to policies on polygraph use by Federal agencies.

My name is David C. Raskin, and I am a Professor of Psychology at the University of Utah in Salt Lake City, Utah. I have specialized in human psychophysiology for 25 years, and I have been engaged in scientific research on polygraph techniques for 14 years. I am also trained and licensed as a polygraph examiner and have been involved in the teaching of those techniques and their applications for 12 years. My research has been supported in part by several Federal grants and contracts, and I have provided training, consultations, and evaluations for many Federal agencies. This testimony is being presented at the request of the American Psychological Association, although these statements and opinions are my own and do not necessarily represent those of the American Psychological Association or the University of Utah, which have no official positions on these issues.

SUMMARY AND CONCLUSIONS

The descriptions and comments which follow are designed to elucidate the difficult scientific and policy considerations which are raised by the proposals before this committee. They begin with a brief history and description of the major polygraph techniques which have been devised for the purpose of assessing the credibility of individuals in a variety of situations and applications. From that discussion I conclude that the Control Question test has the greatest relative utility in assessing credibility in wide range of investigative applications. Scientific studies indicate that the accuracy falls somewhere between 80–97% in the investigation of specific incidents within the context of criminal investigation.

When one considers the use of polygraph examinations in the ways which have been proposed by the administration and the DOD, a number of serious problems is confronted. The Relevant-irrelevant test is utilized extensively by the N.S.A and the C.I.A. and to a lesser extent by the F.B.I., but the scientific evidence reveals a relatively low degree of accuracy for the Relevant-Irrelevant test. The errors produced by that test as well those which occur with the Control Question test more frequently indicate deception on the part of someone who is actually truthful as compared to incorrectly showing truthfulness for someone who is in fact practicing deception. That raises questions about the possibility of adverse actions against truthful persons on whom the polygraph test was incorrect. Furthermore, there is no scientific evidence regarding the accuracy of polygraph tests when they are employed as a personnel screening devices.

A related problem is raised by the recent scientific evidence which indicates that it may be possible to train people to defeat the purpose of polygraph tests. Although that may not be a problem for general applications within criminal investigation contexts, it looms as a potentially serious problem when polygraph techniques are relied upon to detect those who plan to engage in espionage or are engaging in such activities. The requisite information is readily available to those who would be interested in training agents to infiltrate our security establishment by beating the polygraph test. Recent research has shown that special physiological recording techniques can be used to detect the use of such countermeasures, but such equipment is not presently available to government polygraph examiners and they have no training or knowledge concerning their use.

Even if one assumes that polygraph techniques are highly accurate overall, when they are utilized to screen large numbers of persons in a situation where very few are actually practicing deception, no more than 11% of persons who fail such tests are actually practicing deception. That conclusion is based up standard analytic techniques, and it raises serious problems for those who propose to impose adverse consequences on 89% of those who fail such tests. The problems are compounded by the probable negative effects of a mandatory policy for such tests which would be expressed by higher rates of erroneous results, loss of morale among employees, unnecessary harassment and invasions of privacy, and the loss of services of valuable employees.

Another major problem is the generally inadequate training and lack of psychological and scientific sophistication of polygraph examiners and those who are responsible for training the Federal polygraph examiners. The personnel who train Federal polygraph examiners are grossly deficient in the psychological, physiological, and scientific knowledge which is required to conduct an adequate and effective training program. That results in less than optimal training which now is mistakenly assumed to be the best available and sufficient to provide polygraph examiners with the skills required for conducting accurate polygraph examinations. Those problems are compounded by the lack of oversight procedures which guarantee adequate levels of skill, competence, and integrity among Federal polygraph examiners and which also guarantee implementation of the individual safeguards against abuses which are specified by the directives.

A careful analysis leads to the conclusion that serious problems exist with regard to implementation of the proposed directives. Until more scientific research is conducted to provide answers to the problems of countermeasures and accuracy of polygraph screening techniques, as well as to develop methods for detecting the use of countermeasures, there are major questions about the advisability of increasing our reliance on polygraph tests in areas of national security. Those problems are magnified by the need to improve the content and quality of the Federal programs for training polygraph examiners by upgrading the training and qualifications of those who are responsible for designing and implementing such programs. There is also a pressing need for some form of certification or licensing of Federal polygraph examiners along with public oversight procedures which will guarantee the highest standards of performance and integrity in order to ensure an effective program of detection and deterrence while simultaneously protecting individuals from unnecessary adverse consequences and harassment. In light of those problems and the lack of scientific evidence regarding the accuracy of polygraph tests for personnel screening, it seems ill-advised to rely on the results of a polygraph test as the sole determinant of any personnel action.

HISTORY AND GENERAL CONSIDERATIONS

The polygraph or so-called "lie detector" has a long history of development and application, and there is a great deal of scientific research as well as controversy concerning its accuracy and desirability as a method for assessing credibility. Last year, in response to the Administration and DOD directives and a request from the House Committee on Government Operations, the Office of Technology Assessment undertook a major study of the scientific aspects or polygraph techniques. I had the opportunity to serve on the National Advisory Panel for the OTA study. Their report (Saxe, Dougherty, & Cross, 1983) is generally regarded as a thorough and thoughtful examination of polygraph techniques, the current status of scientific research pertaining to those techniques, and issues surrounding their applications. Althouth I do not totally agree with the OTA report, I believe that it is a fair representation of the scientific status of the polygraph field. Therefore, my remarks will be confined to those areas which appear to need amplification along with some observations and suggestions regarding current practices and limitations in present Federal polygraph programs.

Polygraph techniques are utilized in a variety of settings. Their use by the Federal Government occurs mainly in the investigation of specific criminal incidents by agencies such as the U.S. Secret Service and the F.B.I. and the screening and investigation of persons employed in positions with access to sensitive information such as the National Security Agency, the C.I.A., and Military Intelligence. The Secret Service also utilizes polygraph techniques in the investigation of matters relating to the protection of the President and other government officials. To my knowledge there are no programs of periodic testing of those already employed, but there have been recent proposals for periodic testing by the DOD and personnel screening by the Justice Department.

At the outset it should be noted that there is no known specific physiological response or set of responses which is unique to deception (Podlesny & Raskin, 1977). The physiological reactions measured by a polygraph, such as palmar sweating, blood pressure increases, and changes in respiration, occur to a wide array of stimuli in a variety of situations. Therefore, it is a difficult task for the psychologist or polygraph examiner to devise a technique by which one can draw accurate inferences about truth and deception from an analysis of the pattern of physiological reactions produced when the subject answers the questions about an incident. Different approaches have been taken to that problem.

POLYGRAPH TECHNIQUES

There are three major polygraph techniques in present use: the Relevant-Irrelevant (R-I) test, the Control Question (CQ) test, and the Concealed Information test (Raskin, 1982). The Relevant-Irrelevant test was developed by Psychologist William Marston at Harvard University about 70 years ago. It is the oldest of the three techniques and is most frequently used by the N.S.A. and the C.I.A. in screening employees for sensitive government positions. the R–I test consists of a series of questions asked of the subject, often without prior review. The two two types of questions are relevant questions pertain to the crime ("Did you steal that document?") and irrelevant questions ("Is today Wednesday?"). If the subject shows consistently stronger reactions to the relevant questions, it is concluded that the result indicates deception. If that pattern does not occur, then the examiner may conclude that the subject was truthful.

One does not have to be a psychologist to recognize the major problem inherent in the R–I test. Since it is readily apparent to the subject that the only important questions in the test are the relevant questions, relatively large reactions would be expected on that basis alone. Therefore, there is no clear way to interpret the outcome of an R–I test, and it is subject to a great deal of error. It would be expected that many innocent subjects would produce deceptive outcomes on the test, a type of error known as a false positive error. There is also a problem of guilty subjects passing the test because there are few protections against an individual who shows a low level of reactivity such as might be induced by the use of drugs. That type of error is known as a false negative error. Although the Relevant-Irrelevant test is uniformly rejected by the scientific community as a valid technique for testing in specific incident investigations, some Federal agencies such as the F.B.I. still utilize it for those purposes. Most other agencies reject it in favor of the CQ test in all specific investigations.

The Control Question (CQ) test was developed in the 1940's by John E. Reid, a Chicago attorney who worked with Professor Fred Inabau of Northwestern University. It has become the most widely used and accepted polygraph technique in the investigation of specific incidents, and it has recently been subjected to considerable research by the scientific community. My laboratory at the University of Utah has been engaged in such research for the past 14 years with funding from the Department of Defense and the U.S. Department of Justice.

The CQ test differs from the R–I test in several ways, the most important of which is the inclusion of control questions. A control question is designed to provide an opportunity for an innocent subject to become more concerned about a question other than the relevant questions and to elicit stronger physiological reactions to the control questions. If the subject shows stronger reactions to the control as compared to the relevant questions, the test outcome is interpreted as truthful. Stronger reactions to the relevant questions are indicative of deception to the relevant questions.

The control questions deal with the acts similar to the issue under investigation but more general in nature. They cover many years in the prior life of the subject, they are deliberately vague, and almost anyone would have difficulty answering them truthfully with a simple "No". In a case involving a stolen document, a control question might be "Prior to 1982 did you ever deceive someone who trusted you?" They are presented to the subject in a manner which is designed to lead the subject to believe that admissions would negatively influence the examiner's opinion and that strong reactions to those questions on the test would produce a deceptive result.

The third polygraph technique is the Concealed Information (CI) test, often referred to as the Guilty Knowledge test. It is designed to be used in those specific incidents where there is detailed information about the crime or incident which only persons involved would know and which has not been revealed to the public or the suspects. It consists of a multiple-choice type test in which specific alternative anweres are presented to the subject, and it is expected that a guilty person would show strong physiological reactions when the correct alternative is presented. The greatest virtue of this test is that an innocent person has little change of failing the test because of its design. However, it is seldom useful in practice because few incidents provide the necessary protected information. It is also subject to a moderately high rate of false negative errors which may be due to the lower degree of emotionality evoked by that type of test (Podlesny & Raskin, 1978) and the failure of many suspects to attend to or recall the specific details of the incident for a variety of reasons such as intoxication at the time of the event or extreme stress and confusion.

SCIENTIFIC RESEARCH

There is controversy within the scientific community concerning the accuracy of the various polygraph techniques. Although there are disagreements about the level of accuracy achievable with those techniques, the scientific research provides a basis for the widespread agreement that the CQ test shows the highest relative accuracy and utility and is the best available technique for assessing veracity in the context of specific incident investigations. That research is generally of two types. The first type utilizes laboratory simulations of crimes which closely approximate real-life criminal acts such as thefts (Raskin, 1982). They offer monetary bonuses for truthful test outcomes to guilty and innocent subjects as determined by the experimental procedures, and the subjects are recruited from prison populations (Raskin & Hare, 1978), the general community (Kircher & Raskin, 1982), or special populations such as method actors (Dawson, 1980).

TABLE 1.—PERCENT ACCURACY OF CONTROL QUESTION TEST IN LABORATORY EXPERIMENTS

	Raskin & Hare (1978)	Podlesny & Raskin (1978)	Rovner, Raskin & Kircher (1979)	Dawson (1980)	Kircher & Raskin (1982)	Combined Results
All subjects:	N=48	N=20	N=48	N=24	N=100	N=240
Correct	88	85	88	88	87	87
Wrong	4	5	4	8	5	5
Inconclusive	8	10	8	4	8	8
Decisions correct	96	94	96	91	95	95
Guilty subjects:	N=24	N=10	N=24	N=12	N=50	N=120
Correct	88	80	88	100	88	88
Wrong	0	10	0	0	4	3
Inconclusive	12	10	12	0	8	9
Decisions correct	100	89	100	100	96	97
Innocent subjects:	N=24	N=10	N=24	N=12	N=50	N=120
Correct	88	90	88	75	86	86
Wrong	8	0	8	17	6	7
Inconclusive	4	10	4	8	8	7
Decisions correct	91	100	91	82	93	92

There are five mock-crime studies which utilized non-student populations, field polygraph techniques and measures, and trained polygraph examiners. The results of those studies are shown in Table 1. It can be seen that there is a very high degree of accuracy of the CQ test when employed in a realistic simulation using field polygraph techniques with subjects who resemble the target population of criminal investigations. The combined accuracy of decisions was 95%, with an inconclusive rate of 8%. However, it should be noted that the majority of errors were false positive errors, that is diagnosing deception in subjects who were actually truthful. When decisions were made, 8% of innocent subjects were misdiagnosed as deceptive and only 3% of guilty subjects were misdiagnosed as truthful (false negative errors).

Since laboratory simulations are not real life situations, especially in terms of the greater negative consequences of failing the test and the more substantial rewards of passing the test, it is necessary to obtain data from polygraph examinations conducted in actual criminal investigations. That is a difficult problem because it is not easy to establish a criterion of innocence or guilt against which to assess the performance of the polygraph test. It is generally agreed that the best available method is to utilize cases in which polygraph tests have been conducted and the guilt or innocence of the subjects was later established by the confession of the guilty person. The polygraph charts from such tests are then submitted to polygraph examiners who are asked to make a diagnosis based solely on those charts without any knowledge of the guilt or innocence of the subject or the opinion of the original examiner. Their decisions from that blind analysis are then compared to the confession criterion to provide an estimate of accuracy of the polygraph tests.

Another method for assessing the accuracy of field polygraph tests is to sample from a large number of polygraph tests conducted in criminal investigations and to establish a criterion of guilt or innocence by submitting the available evidence (without the polygraph result) to a panel of experienced attorneys who provide judgments of guilt or innocence. The decisions of the original polygraph examiner or those obtained from a blind interpretation of the polygraph charts are then compared to the verdicts of the panel of experts to provide an estimate of the accuracy of the polygraph tests. There are three such studies in the literature, but they all suffer from the problem that using a panel of experts to provide the criterion for guilt or innocence allows for errors in which the panel was wrong and the polygraph was correct. If the panel concludes that the subject was innocent and the polygraph produced a deceptive result, we do not know whether the panel was correct and the polygraph result was a false postive error or the polygraph was correct and the panel made a false negative error. In my opinion, much less confidence can be placed in the results of panel field studies than in confession studies.

The OTA study examined the literature on field studies and assessed the methodology of the reported studies. It concluded that there are 10 confession and panel field studies which meet the scientific criteria for adequate methodology to a reasonable degree. When OTA averaged the accuracies of those studies, the results indicated that decisions made on the basis of the polygraph were 89% correct on verified guilty subjects and 80% correct on verified innocent subjects.

The panel studies are questionable because of the problems inherent in their methods, and two confession studies included by OTA have serious problems in methodology. One confession study (Horvath, 1977) included victims of violent crimes and used examiners who were not adequately trained in the evaluation of polygraph charts. The other (Kleimuntz & Szucko, 1982) used evaluators who were students that had not completed their training in a basic polygraph course. They were given only one instead of all three charts from the polygraph test, and they were not allowed to make decisions in the usual manner employed in the field. If one includes only those studies which utilized experienced polygraph examiners and normal procedures for evaluating polygraph charts, then the accuracy of decisions in field studies is approximately 90% for guilty and innocent subjects.

Because of the lack of scientific validity of the Relevant-Irrelevant test and the lack of utility of the Concealed Information test, my analyses will concentrate on the CQ test since it is the most versatile and thoroughly researched test for use in specific incident investigations and would be the method of choice for the applications embodied in the programs which are the subject of this hearing. There is another technique called the Directed Lie Control (DLC) test which has been employed by some government agencies. It utilizes principles embodied in the CQ test but instructs subjects to lie to an innocuous question which they formulate with the examiner. The great virtue of the DLC test is the use of control questions which utilize known lies that do not delve into the subject's past life and which can be constructed each time a subject is retested. There is only one study of the DLC (Barland, 1981), but it provides some encouragement for additional research on that technique.

CAN THE POLYGRAPH BE BEATEN?

There are three issues which have raised major concerns about the effectiveness of polygraph tests. Those issues concern the use of drugs, physical countermeasures, and personality factors such as low socialization and psychopathy. Concerns have been expressed that guilty persons may defeat the tests by ingesting drugs which reduce reactivity during deception or by engaging in physical maneuvers which cause reactions to control questions which mislead the polygraph examiner. It has also been proposed that psychopathic or sociopathic individuals who are very adept at lying and are lacking in social conscience can avoid detection in polygraph examinations because they do not have normal emotional reactions when they are practicing deception during the test. The terms psychopathy and sociopathy refer to the disorder which is formally diagnosed as antisocial personality according to the American Psychiatric Association (1980).

There are four studies in the literature which investigated the effects of drugs on detection. The first study (Waid, Orne, Cook, & Orne, 1981) reported that the ingestion of a normal dose of a common tranquilizer enabled a large percentage of college students to beat a Concealed Information (CI) test. However, a more realistic and carefully conducted study by Boisvenu, Iacono, and Fleming (1982) demonstrated that neither the tranquilizer Valium nor the energizer Ritalin was of any help in defeating the CI test. Both of those studies used the CI test which is theoretically more susceptible to such attempts than the CQ test. The CQ test would be expected to protect against false negative errors from drug usage because the reduction in reactions would affect both the control and relevant questions and would produce inconclusive results in the worst case.

There are two drug studies which evaluated the susceptibility of the CQ test to drug effects. Gatchel and his associates (Gatchel, Smith, & Kaplan, 1983) obtained results which indicate that propranolol, which is commonly used to control blood pressure, did not assist deceptive subjects to defeat a CQ test. However, Bradley and Ainsworth (1984) reported that 33% of college students who were intoxicated on alcohol during the commission of a mock crime were able to pass a polygraph test, but alcohol intoxication during the test had not effect on its accuracy. Their findings provide justification for the concern that memory impairment or other effects of intoxication during the commission of a crime may have adverse effects on the accuracy of polygraph tests (Raskin, 1982).

The other area of countermeasures which seems to pose a potential threat to polygraph accuracy is the use of physical countermeasures. Rovner, Raskin, and Kircher (1979) gave subjects extensive information about the structure of the CQ test and a variety of suggestions on how to beat the test using physical and mental countermeasures. Such information did not enable any guilty subjects to produce truthful outcomes in the mock crime situation. However, when guilty subjects were given that information and two practice polygraph tests prior to the final test, 25% of them were able to produce false negative results. Honts, Hodes, and Raskin (1984) reported that 47% of college students were able to beat the CQ test when they had been trained to bite their tongues and press their toes down during and following the control questions. A subsequent experiment by Honts, Raskin, and Kircher (1983) found that 70% of similarly trained college students beat the CQ test when they were guilty of a mock crime and were motivated by a monetary reward to produce a truthful outcome on the test. However, the use of muscle potential recordings from the muscles involved in the countermeasure maneuvers enabled the blind evaluator to identify 90% of those subjects who were practicing the physical countermeasures.

The results of those studies indicate that there is a potential problem of people engaging in physical countermeasures to beat the polygraph test in field situations. Although successful attempts would probably require training from polygraph experts, such expertise might be available to those who are attempting to circumvent procedures designed to protect against disclosures of sensitive information. Furthermore, at the present time field polygraph examiners have neither the expertise nor the equipment available to detect the use of physical countermeasures by sophisticated subjects (Honts & Hodes, 1983). Clearly, there is a need for more research and development in the area of physical countermeasures.

The third area of concern centers around the factors of psychopathy and poor socialization. Socialization refers to a concept concerning the extent to which an individual has incorporated the basic moral and social values of our society and the liklihood that the individual may transgress against society (Gough, 1969). Waid, Orne, and Wilson (1979) reported that 20% of college students were not detected in deception by one measure obtained from one chart of a CQ test. They had lower socialization scores than the 80% who were successfully detected. Unfortunately, the poor methodology of that study renders the results uninterpretable. Other studies have not found similar effects. Raskin and Hare (1978) found that poorly socialized convicted felons were more readily detected in deception by the CQ test in a mock crime situation, and those who were clinically diagnosed as psychopaths were also somewhat easier to detect than nonpsychopathic subjects. Those findings are consistent with data obtained from field CQ tests on criminal suspects (Barland & Raskin, 1975). It appears that lack of moral and social development does not interfere with the accuracy of properly conducted CQ tests in realistic simulations or real-life situations.

There have been expressions of concern about the possibility that hypnosis, biofeedback, yoga, meditation, and mental imagery may be used to defeat polygraph tests. The literature seems to indicate that hypnosis is not an effective countermeasure (Barland & Raski, 1973). In general, the use of mental countermeasures and biofeedback has not produced any results which raise concerns about their possible utility as countermeasures. The only studies which have reported such effects have failed to use adequate polygraph techniques and been methodologically inadequate, at best.

CURRENT PROPOSALS

Up to this point, the review of the scientific literature and my conclusions have dealt with the applications of polygraph techniques in the investigation of specific past events as occur in a criminal incident. The issues of the present hearing reach beyond those applications to the problems inherent in the selection of employees by the use of mandatory polygraph examinations and the investigation of unauthorized disclosures of information critical to the national security. These applications inject factors into the situation which are not present in the criminal investigation context. By comparison with that situation, the proposed expansions of use by the DOD and the Administration involve a potentially more coercive atmosphere as well as the problem of identifying those who intend to engage in behavior which is a threat to the national security.

There is no body of scientific literature which provides a firm basis for estimating the accuracy of polygraph tests in the screening situation. There are only two laboratory studies (Barland, 1981; Correa & Adams, 1981) and no field studies of the accuracy of polygraph tests in employment screening. The Correa and Adams study claimed to support the validity of the typical employment screening test, but the 25% error on specific questions and a number of methodological problems raise questions about their conclusions. The Barland study used military personnel in a more realistic situation with the DLC test. Depending on the manner in which the charts were interpreted, the error rates of decisions ranged from 16–24% for truthful subjects and from 14–32% for deceptive subjects. Those are rather high rates of error if one intends to use the test for screening in a national security situation, but it should be remembered that the DLC test has not been scientifically investigated before and may not be as accurate as the CQ test. More research is needed to assess the utility of the DLC in specific incident investigations as well as the utility of the CQ test in screening applications.

It is generally agreed that voluntariness is an important feature of an optimal situation for polygraph accuracy. If people are forced to take polygraph examinations under the threat of termination for refusal to submit to the examination or for failure to pass the examination, then the accuracy of the results may be lower than those obtained in the criminal investigation context where there is a Constitutional protection against self-incrimination. That speculation appears to be reasonable in light of the general literature of psychophysiology, but there are no scientific data which directly shed any light on the validity of that concern. Furthermore, it can be argued that even the criminal investigation context embodies certain coercive elements which may override the formal aspects of the right to refuse the test without prejudice. Obviously, many guilty suspects agree to take the polygraph test for a variety of reasons and many are found deceptive.

When the DOD and Presidential directives were first issued, they included aperiodic examinations and sanctions for refusal to take the test or for failing the test. Those proposals have been modified to eliminate the aperiodic tests and to reduce the adverse consequences of refusal and deceptive outcomes. The scope of their applications has also been reduced to very restricted uses in defense intelligence and selected, specifically designated programs involving access to restricted information. For personnel already employed in those programs and in criminal investigations and counterintelligence, adverse action will not be taken solely upon refusal to take the test. However, applicants will not be selected for those programs if they refuse to take the polygraph examination. Furthermore, polygraph examinations will be utilized as a supplement to other investigative procedures, not as a substitute for them. Adverse action requires approval at the highest level of the Department, and there are numerous protections to the individual embodied in the procedures.

The proposed applications for screening new employees and the investigation of specific criminal incidents or unauthorized disclosures of sensitive information restrict the subject matter to the pertinent issues of the investigation. Questions of a general nature or of personal beliefs, values, and life style are prohibited. With those restrictions and the protections afforded to the individual, the polygraph procedures seem to approximate those present in the usual criminal investigation context. Furthermore, the positions and situations to which the procedures are addressed constitute positions of special trust with serious national security problems. As such, it seems reasonable to require special qualifications and procedures for individuals who desire those positions.

A carefully managed and restricted application of polygraph examinations seems reasonable as long as adequate safeguards are provided to the individuals asked to undergo such examinations. The major safeguards embodied in the proposed directives include timely notification about the examination; the right to legal counsel prior to, during, and after the examination; the right to terminate the examination at any time; not taking action solely on the basis of a deceptive polygraph result; providing an opportunity for reexamination; a comprehensive field investigation if the polygraph indicates deception and no adverse action if the field investigation produces no actionable derogatory information; restricted adverse actions for refusal to submit to a polygraph examination, such as denial of access, but no change in grade or pay; prohibiting unnecessarily intrusive questions or questions about religious, racial, political, or sexual attitudes; limiting the relevant questions during screening examinations to prescribed counterintelligence topics; limiting the dissemination of the results; and procedures for appealing any adverse consequences in cases involving polygraph examinations.

PROBLEMS WITH THE CURRENT PROPOSALS

Although there are many stated procedures for safeguarding the rights and interests of the individuals affected by the proposed directives, serious questions and problems remain. There are no guarantees that the examinations will be conducted according to the highest standards of practice or according to the prescribed procedures. In the absence of a tape recording of the entire proceeding, there would be no method for evaluating a complaint by an examinee that the examination did not meet professional or procedural requirements. Complete tape recording of all such examinations should be required, and all of the materials generated by the examination should be made available to the examinee or his/her representative in the event of an adverse action.

Another problem which should be considered prior to adopting any mandatory polygraph program for employees is the potential effect on employee morale and the civil liberties implications of potential investigations which may follow the polygraph examinations. The hearings held by the U.S. Senate Subcommittee on the Constitution in 1977 and 1978 revealed a widespread belief among the managements of major corporations that mandatory programs for screening and periodic polygraph examinations of employees are counterproductive in terms of lowered morale, work output, and company loyalty. It is possible that such effects would occur among employees of civilian contractors as well as government employees. Furthermore, an adverse outcome on a polygraph test restricted to narrow security issues would very likely lead to an expanded investigation of unspecified scope. That poses the hazard of potential harassment, personal embarrassment, and other adverse consequences which were not part of the original purpose or intent of the polygraph examination. The threats to privacy and sense of well-being created by such an open-ended procedure raise substantial social and ethical questions about the proposed polygraph programs.

Even if the proposed applications of polygraph techniques are reasonable and restricted in nature and scope of application, there are two major problem areas which require discussion and attention. One area concerns the confidence one can place in the outcome of any particular polygraph test as a function of the proportion of deceptive individuals in the population being tested. That is referred to as the base rate problem. The second area of major concern is the training, competence, and integrity of the personnel involved in the administration and interpretation of the polygraph examinations.

The problem of base rates is often overlooked in the interpretation of the outcome of tests. Whether it be a test for deception, a test for cancer, or a test for psychiatric disorder, one cannot simply assume that the overall accuracy of the test is a direct indication of the confidence that can be accorded to the outcome of that test in any particular instance. For example, assume that a test for detecting cancer has been shown to be 95% accurate. Only when 50% of the people who are given the test actually have cancer will the confidence in both positive and negative test outcomes be 95%. If the base rate is such that 10% of the people who take the test actually have cancer, then we will be almost certain that a person does not have cancer when the test outcome is negative (indicates no cancer). However, under those circumstances only 68% of those who obtain a positive test outcome will actually have cancer. That is a false negative rate of 32%, and many people would undergo unnecessary, costly, and life-threatening procedures on the basis of the test outcome. On the other hand, assume a situation in which the test is used on only those people who had already been given examinations and procedures which indicated a high likelihood that cancer was present, a base rate of 90%. Under those circumstances we would be virtually certain that a person has cancer when the test outcome is positive. However, with a base rate of 90% cancer among those tested, only 68% of those who obtain negative results will be free of cancer. In other words, 32% of those whom the test indicates are free of cancer actually will have cancer and will not receive the necessary treatment.

A similar analysis can be applied to the confidence we have in the outcomes of polygraph tests. In the polygraph situation the analysis is a little more complicated because we have different accuracy rates for guilty and innocent subjects. In order to cover a reasonable range of accuracy estimates, I have chosen accuracies from two sources: the laboratory mock crime experiments I discussed previously and the estimate of field accuracy derived from the 10 field studies relied on by the OTA study. In order to encompass all of the current and proposed applications of polygraph examinations, I have also done the calculations for base rates which ranged from 90% guilty individuals to only 1% guilty individuals. The results of those calculations are shown in Table 2.

TABLE 2. PERCENT CONFIDENCE IN TEST RESULTS WITH DIFFERENT ESTIMATES OF ACCURACY OF POLYGRAPH TESTS AND BASE RATES OF GUILT

Base rate of guilt	Accuracy estimated from			
	Laboratory studies 97 percent guilty, 92 percent innocent		Field Studies (OTA) 89 percent guilty, 80 percent innocent	
	Test result		Test result	
	Deceptive	Truthful	Deceptive	Truthful
Percent:				
90	99	77	98	45
80	98	88	95	65
70	97	93	91	76
60	95	95	87	83
50	92	97	82	88
40	89	98	75	92
30	84	99	66	94
20	75	99	53	97
10	57	99	33	98
1	11	100	04	100

An inspection of Table 2 indicates that regardless of which set of estimates of polygraph accuracy one adopts, the confidence in a deceptive outcome is very high when the base rate of guilt in the population of subjects is very high. Under those circumstances confidence in a truthful outcome is moderate or low. For example, if 90% of the people tested are actually guilty, then confidence in a deceptive outcome is 98–99% and confidence in a truthful outcome is only 45–77%. Those conditions might be approached in situations where extensive evidence is required before any tests are conducted and everyone who is a suspect under those circumstances is required to take a polygraph test. When a person fails the test under those conditions, we can be almost certain that he/she was lying. However, many of those who pass the test would also be guilty, but very few would pass the test.

Some of the proposed applications of polygraph tests might be expected to involve base rates of approximately 50% guilty individuals. That might occur when one or two specific infividuals are suspected of an unauthorized disclosure and there is substantial evidence that one of them is responsible. Under those circumstances the confidence in deceptive outcomes would be 82–92%, and the confidence in truthful outcomes would be 88–97%. That would seem to be a reasonable situation for placing some weight on polygraph results of either type.

In the screening situation in which the polygraph is being used to identify those who are attempting to gain access to sensitive information for subversive purposes, the base rate of such behavior is undoubtedly quite low. If we assume that no more than 1% of people applying for such access under the proposed polygraph program are intending to engage in espionage, then the confidence estimates are quite different from those described above. If a person obtained a truthful outcome on the polygraph test, then we would have virtually 100% confidence in that result. However, we would have only 4–11% confidence in the deceptive results obtained, although there would not be many such results. The pool of deceptive results would contain the few individuals who intended to engage in espionage and many truthful individuals. The problem would be to determine which, if any, of those individuals who failed the polygraph test was actually a spy. Most adverse actions would be incorrect if only the polygraph results were used as a basis for action. Other investigative techniques and information would be required before an accurate determination could be made. However, the truthful outcomes could be used as the sole basis for action regarding those individuals.

It should be noted that the post test interviews which normally follow deceptive outcomes often result in admissions or confessions which resolve the issues. For example, in FY 83 the U.S. Secret Service conducted 69 intelligence examinations in the course of investigations of threats against government officials. In those instances where the test outcome indicated deception, 95% were followed by confessions. In 1982 the U.S. Army CID and INSCOM obtained 50% confessions following deceptive outcomes. Those results indicate that deceptive outcomes narrow down the field of suspects and frequently provide the basis for resolving the cases. Such procedures would be expected to reduce the problem of false positive errors in situations where the base rates of guilt are low.

Unfortunately, there is another problem which needs attention before we can rely on the polygraph results as the sole basis for clearing individuals. That involves the potential for successful countermeasures described earlier. If people can be trained to defeat the polygraph test by the use of physical countermeasures, then we have a greater problem of false negative errors than the above figures indicate. Certainly our adversaries would have a great interest in training their agents to evade detection by polygraph tests. The recent research indicates that such a potential for successful training and performance does exists. More research is needed on the extent of that potential and the means of identifying those who are attempting such tactics. If the data indicate that the problem warrants the development and implementation of methods to detect those individuals, efforts will be required to make the techniques and instrumentation available to the polygraph personnel. I believe that such a research and development program is imperative.

The final problem which I wish to discuss is that present state of training and competence of polygraph examiners. For the past 12 years I have been engaged in the training and evaluation of polygraph examiners. Those experiences have involved the conduct of workshops and seminars for government and private polygraph examiners at the University of Utah and around the nation, formal evaluations of law enforcement and private examiners under grants from the U.S. Department of Justice, evaluations of Federal polygraph programs as a consultant to Federal agencies, and evaluations of the performance of polygraph examiners in the context of criminal and civial litigation. On the basis of those contacts, I have become convinced of two things: the potential utility of polygraph techniques when employed by well-trained and competent examiners and the lack of such training and competence among a substantial proportion of those who are conducting tests in both the public and private sectors.

Almost all Federal examiners with the exception of the CIA are trained at the U.S. Army Military Police School at Ft. McClellan, Alabama. That is a 12-week course which is considered to be the best basic course available in this country. However, the training is not adequate in relation to the current state of scientific knowledge and the need for psychological sophistication and sensitivity on the part of polygraph examiners. The Army school has been run by the same personnel for longer than I have been involved in the polygraph field. That personnel is comprised of former polygraph examiners who are deficient in the requisite formal training in psychology, physiology, biomedical recording techniques, and scientific methodology.

An inspection of the training materials from the U.S. Army School reveals that their program still employs ideas and materials which are 20 years or more behind the state of scientific knowledge about psychology, psychophysiology, and polygraph techniques. Furthermore, there is little indication that they are interested in utilizing the knowledge and skills of the academic and scientific community, whose expertise and assistance they badly need. They have resisted the research efforts by the Department of Defense and Universities which have involved the scientific and academic community. Their major source of information continues to be the private and government polygraph communities which have promoted concepts and procedures having little or no basis in scientific research or accepted phychological principles.

The problems are not restricted to the U.S. Army. One of the major Federal users of polygraph techniques is the F.B.I., which conducts the largest number of polygraph examinations outside the Department of Defense and might be called on to participate in the implementation of the Administration directive. The U.S. Department of Justice had proposed a large-scale program of screening employees, but it recently withdrew that proposal. The F.B.I. would have been responsible for conducting the tests under that proposal.

The F.B.I. only recently began to send its examiners for training at the U.S. Army School, previously having relied on an anachronistic in-house training program which utilized the R–I technique. They still use that technique to some extent. Although they hired one of my former students as the Director of Polygraph Research in July of 1982, there is little evidence that they have conducted any scientific research on polygraph techniques or their validity. The F.B.I. had made arrangements for a major study of the validity of field applications of the CQ test, but they have subsequently displayed a negative attitude toward cooperating in any research which involves evaluation of F.B.I. polygraph performance by another Federal agency or an academic institution. Having evaluated materials from tests conducted by F.B.I. personnel, I have seen little evidence of Psychological sensitivity or scientific sophistication among F.B.I. polygraph examiners. Their program is an example of the deficiencies which exist in the polygraph programs of some Federal agencies and the need for more formal training in psychology, physiology, and the scientific basis of polygraph techniques as requirements for certification as a polygraph examiner.

There is a substantial problem related to the apparent deficiencies in many Federal polygraph programs, especially those which would participate in the implementation of the proposed directives. That is the lack of any formal public oversight and regulation of the training, competence, and integrity of Federal polygraph examiners. At present there is no mechanism external to the agencies operating polygraph programs by which the training and performance of those examiners can be evaluated and regulated. Widespread problems of inadequate training and performance are characteristic of the polygraph profession, both inside and outside of government. Approximately 25 states have legislation which regulates the training, licensing, and performance of polygraph examiners. However, Federal examiners are able to circumvent the requirements of those states by conducting polygraph examinations on Federal reservations and properties within those states.

Although many Federal polygraph examiners, such as those of the U.S. Secret Service, are carefully selected, are well trained and provided with extensive additional education and training, and are subjected to continuing evaluation; many examiners in other Federal agencies are not so carefully trained and evaluated. I believe that there is an urgent need for a program of regulation and oversight of the polygraph programs of the Department of Defense and the Department of Justice since they would be involved in the mandatory polygraph programs proposed by the directives which are the subject of these hearings.

CONCLUSIONS AND RECOMMENDATIONS

My overall evaluation of the polygraph proposals which are the subject of these hearings is complex. I find the most recent versions to be cautious and reasonable in many respects. The limited nature of the proposed uses and the safeguards for the individuals go a long way toward reducing many of my concerns about the original proposals. However, there are serious problems in estimating the accuracy of the proposed applications due to the paucity of scientific research with direct bearing on many of the issues raised by those applications. A great deal more scientific research is needed on countermeasures, the accuracy of field applications of polygraph techniques, the problems introduced by requiring people to undergo polygraph examinations in the employment context, and estimates of base rates of deception in the various applications which are proposed.

There are even greater problems posed by the low level of training provided to many polygraph examiners and their lack of psychological and scientific sophistication. Some programs such as that of the U.S. Secret Service make major efforts to supplement the basic U.S. Army training by utilizing resources from the academic and scientific communities as well as other non-Federal programs. Their outstanding performance shows the benefits of that training, and they also participate actively in research programs. However, that model is unusual among the Federal polygraph programs, and a great deal of updating of training programs and personnel is needed before the major Federal polygraph programs can be entrusted with the responsibilities and obligations which would occur with the proposed expansions of polygraph usage embodied within the Presidential and DOD directives.

Until the problems of training and performance are reduced, regulations and oversight of the involved Federal polygraph programs are implemented, and the necessary data are made available by additional scientific research by non-government organizations; it is my opinion that extreme caution should be exercised in considering any expansion of polygraph use in the Department of Defense or the Department of Justice.

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Chairman TOWER. Thank you, Dr. Raskin.

Dr. Barland?

STATEMENT OF GORDON H. BARLAND, Ph.D.

Dr. BARLAND. Thank you for this opportunity to present my views on this matter.

I am a psychophysiologist and also a trained polygraph examiner.

I would agree with my scientific colleagues that a great deal more research needs to be done.

I think I would differ from them in that I would not curtail the use of the polygraph until that research has been done because research by its very nature takes a great deal of time. Every time a study is done, it raises as many questions as it answers. It is an ongoing process.

I think that some of the controversy regarding the accuracy of the polygraph is due to a failure to distinguish between the accuracy of chart interpretation, which is, of course, a primary scientific concern, on the one hand, versus the utility of the polygraph on the other. That is, the actual effectiveness of it. I think that in terms of utility the polygraph is very useful indeed from a number of standpoints.

First of all, I think it serves as an effective deterrent to people who are thinking of making an unauthorized disclosure of classified information either in a kind of private-type sense where they are sitting in a bar with friends and they have had a little bit too much to drink and perhaps they are thinking about revealing certain aspects of their work that they really shouldn't.

I believe it is also a deterrent in a situation where the person is not being quite so innocently indiscreet; that is, where the person may in fact be a Soviet spy. There are a number of cases on record where American citizens who were serving as spies for the Soviets had been requested by the Soviet case officers to apply for positions with NSA or the CIA and the Americans refused to do so on the grounds they then would be subject to taking polygraph tests.

So, I think the polygraph does serve as an effective deterrent.

Another aspect of the utility of the polygraph is the quantity, the quality, and the accuracy of information that is obtained during the polygraph interview, both during the pretest interview and, while the test is in progress, in discussions that occur between charts and also following the polygraph examination when there were reactions to one or more of the relevant questions.

In such situations the polygraph examiner brings the reactions to the attention of the person taking the test and they discuss what may be causing it.

If the reactions are in error, that is, they are caused by some innocent association to either the intent of the questions or to specific words within the questions, then this discussion gives the subject of the test an opportunity to explain what was on his mind when those questions were being asked.

He is given an opportunity to get any relatively unrelated concerns off his chest so that what otherwise might become a false positive error on the basis of chart evaluation if the test were to be terminated at that point, can be resolved in many cases within the context of the polygraph itself before the examiner makes an official report. In this situation no adverse consequences accrue to the person taking the test.

Let us take the situation where the person does show emotional reactions to one of the relevant questions consistently every time it is asked and the results are in fact an error because the person is not holding back significant information.

Well, a second line of defense against false positive evidence comes into play. The person would be typically asked to take another polygraph test.

Although the two tests are not independent psychologically, that is, the person taking the test the second time knows he had problems on the first test nonetheless, experience has shown, that if in fact he is not holding back significant information on the test questions, there is a good chance he will be cleared on the second test.

Mr. Ansley explained that in some cases the person may be invited to take the test for the third time. When truthful results occur, then these would tend to mitigate or to reduce the impact of any false positive results that had occurred prior to that time.

Let us take the extreme situation where every single time the person takes the polygraph test he reacts emotionally even though he is telling the absolute truth.

In this situation a field investigation would be made. If the person is in fact telling the truth, then the investigation should be able to confirm that.

So, depending on your viewpoint, there are two or three safeguards against false positive errors built into the system.

If false positive errors were to occur as frequently as the statistical calculations would predict, then I don't think the polygraph would have developed as far as it has because it is used very often in investigative work.

Investigators, by their very nature, are very pragmatic. If the polygraph fairly often gives false results, results indicating that the person is guilty, or is holding back information, or is being deceptive, or whatever, the investigation continues and if the polygraph were wrong fairly often, investigators would have tumbled to that many decades ago.

This has not been the case.

[Additional information follows:]

> The polygraph is often used in investigative work. Whenever positive results occur, indicating deception, the investigation of that person is intensified. If false positive errors were to occur as frequently as the critics have predicted, the investigators would be the first to know, and would have long ago stopped relying upon the polygraph results, for by necessity they are extremely pragmatic.

Mr. Ansley has cited statistics which have not been published yet and which were unknown to me prior to a short time ago, but statistics which indicate that the number of positive results that is indicating deception is relatively small and on investigation, most of those are cleared up.

Thus, the problem of false positive error rates caused by a very small proportion of deceptive people within the population does not appear to be the practical problem that this statistical approach would tend to indicate.

I would like to just make a comment about the problem of compulsory examinations and the effect it might have on the false positive error rate.

The argument can be made that if the tests are compulsory, there is a degree of coercion in the situation, which would be expected to arouse anger and resentment on the part of the person taking the test which could result in an increase in false positive errors.

I am not convinced that necessarily follows.

First of all, I, myself, have been involved in a periodic testing in an industrial context where the examinations were compulsory. I had expected that I would see a lot of anger and resentment on the part of the people taking the test.

To my surprise, I saw very little anger and resentment. Most people understood the reasons for the test, and most agreed with the necessity for the test.

Many of them volunteered that if they were in their employer's situation, they would probably use the polygraph themselves.

So, I don't think that one can equate a compulsorily taken test with coercive environment.

In my experience with aperiodic testing in the industrial context I saw very few cases which I believe were false positive errors which could be attributed to the fact that the tests were compulsory.

Mention was made earlier this morning about countermeasures and how they, when effectively applied, could give a false sense of security and, therefore, do more harm than good to the overall security of the United States.

I think it is not proper to think of a countermeasure as being either effective or ineffective.

Rather, I think it is a continuum that if the polygraph is X percent accurate when no countermeasures are being employed, it may be Y percent accurate with a countermeasure being employed.

Let us say the reduction in accuracy was from 90 percent down to 80 percent. Even with a polygraph being used in a situation where the countermeasure would reduce the accuracy of the polygraph, nonetheless, in many such situations despite the countermeasure, the polygraph would be able to give correct results and, therefore, would be of help in an investigation.

[Additional information follows:]

Rather, effectiveness is a continuum, such that if the polygraph is X percent accurate when no countermeasures are being employed, it may be Y percent accurate when a given countermeasure is used. For example, a certain countermeasure may reduce the accuracy of the polygraph from, say, 90% to 70%. Even though it reduces the accuracy by 20%, the person using it still has a 70% chance of having his lies detected. In order to assess the practical effect of any reduction in the accuracy of the polygraph, one must compare the accuracy of the polygraph against what the accuracy would be without the polygraph, which is a function of what the base rate for guilt is. In a screening situation in which only one person in one hundred is holding back significant information, then by definition there is but one chance in one hundred of identifying that person by chance alone. Even if a countermeasure were to reduce the accuracy of the polygraph on guilty people down to, say, 20 percent, that still would be considerably above a chance level of one percent, which could be of considerable help in the investigation.

A remark was also made concerning the training of the Federal polygraph examiners as being basically substandard.

I would disagree with that. Like Dr. Raskin, I have had contact with a number of Federal polygraph agencies and a number of Federal polygraph examiners.

I have been trained at the Federal Polygraph School. I am impressed with the quality of the Federal polygraph examiners. This is my belief based on observation and is unsubstantiated by any hard research.

The Federal polygraph examiners, I believe, are on the average more competent than the average civilian polygraph examiner.

I think the Federal polygraph course is a good course. I am not saying it is perfect, nor that it cannot be improved, but I think it is a good polygraph school indeed.

In conclusion, I would only say that I believe that the polygraph can be very effective in obtaining information of real value in improving the security of SCI-type information.

I would urge the committee to authorize the Department of Defense to expand the use of the polygraph. I think it would be helpful in the national defense.

Thank you.

[The prepared statement of Dr. Barland follows:]

PREPARED STATEMENT OF DR. GORDON H. BARLAND, PH.D.

THE UTILITY OF THE POLYGRAPH IN APERIODIC SCREENING

Mr. Chairman, I am grateful for the opportunity to present my views on the proposal by the Department of Defense for aperiodic polygraph examinations of persons having SCI access. I believe that that the use of the polygraph would help safeguard that information.

The 1970's saw an exponential increase in the amount of scientific research on the detection of deception. We now know more about it and the variables that affect its accuracy than we did ten years ago. Nonetheless, a number of areas have beome controversial due to the increased scientific interest, and a great deal more research is needed to resolve many issues. Among the areas urgently needing research are the accuracy of multi-issue screening examinations, and the effect of countermeasures on the various test formats. In the absence of hard research in these areas, many scientists have based their positions based solely on logic and theory—dangerous grounds indeed upon which to build a stable structure, as the history of science has so often demonstrated. Until the research has been conducted, it is often necessary to draw upon logic and theory, but any such conclusions must be considered tentative, and should be tempered with the observations of those who have personal experience with such matters; in this case, polygraph examiners who routinely conduct aperiodic examinations. In this respect, the 1984 DOD report on The Accuracy and Utility of Polygraph Testing is a useful source of information.

THE POLYGRAPH AS A DETERRENT

One reason why I advocate the use of the polygraph in aperiodic examinations of people with SCI access is that it serves as a deterrent to those who may be considering the unauthorized release of such information. It is impossible to know to what extent hostile intelligence services have been frustrated by the use of the polygraph in their quest for such information, but a number of such cases are cited by the 1984 DOD report. In addition, several confessed spies have revealed that when their Soviet case officers asked them to try to obtain jobs with the CIA or NSA, they refused to do so because they knew that they would be asked to take polygraph tests, and felt that their espionage activities would then come to light.

THE UTILITY OF THE POLYGRAPH

I think that some of the controversy regarding the polygraph arises from the failure to distinguish between various types of accuracy, such as the accuracy of blind chart evaluations versus the accuracy of the decisions made by the polygraph examiners who conducted the tests and who had more information at their disposal than the charts alone. When evaluating the effectiveness and utility of the polygraph technique, it is necessary to consider the quantity, quality, and accuracy of all information obtained throughout the entire examination procedure, of which the polygraph charts are but one source. Other sources of information include the nonverbal behavior of the subject observed by the experienced interviewer/examiner and the statements made by the person being examined, both during the pretest interview and following questionable reactions observed in the charts. One of the main reasons why the polygraph is so widely used by industry is that it seems to be an extremely cost effective way for management to obtain detailed information upon which to base sound decisions. Quite apart from the issue of the accuracy of chart interpretation, the wealth of accurate information provided by people during polygraphic interviews would without doubt enhance the security of special compartmented information.

DETECTING FALSE POSITIVE ERRORS

False positive errors are when a truthful person appears deceptive as a result of a polygraph test. False negatives are when a deceptive person is cleared by the polygraph. If everybody taking the test were in fact truthful, the only type of error possible would be a false positive. Consequently, in a screening situation where most of the people can be presumed to be truthful, false positive errors would be expected to occur much more frequently than false negatives. The argument has been made that in such situations where the base rate for truthfulness is high, more than half of those called deceptive by the polygraph examiner may be in error. Because the error rate may be more than 50%, the polygraph should not be used, since the decision is more likely to be wrong than not. Such reasoning is simplistic, in that it ignores the value of being able to narrow the scope of an investigation to a much smaller group of people.

Moreover, whenever deceptive results occur, the person is informed of the results and asked for an explanation. Many of the correct deceptive results are confirmed by admissions at this point. However, not all reactions are caused by deception. Some may be caused by innocent associations to the question or to specific words within the question. Once these are explained to the examiner, the questions would be reworded to incorporate the new information, and the test resumed. If the explanation cleared up the reactions, the person would not be reported as being deceptive, and no harm would accrue to the individual. Thus, the polygraph examiner is capable of detecting potential false positive errors during the examination itself. Moreover, the patterning of the reactions can tell the examiner something about what may be causing them. For example, if a person is angry or upset, he would be expected to react to many or all of the relevant questions. When a person consistently reacts to only one or two of the relevant questions, it indicates that there is something specific about those questions which is causing the reactions. In either case, the reactions would be an indication that the examiner should skillfully interview the person to determine their cause.

When the official report on the examination shows deception, and it could not be resolved on the spot by the examiner, the person likely would be asked to take another polygraph test. If, in fact, the person had been entirely truthful on the first test, the odds are that the re-examination would show truthfulness, and the first, erroneous result, would have been brought to light. If, however, the second test also erroneously indicates deception, the normal procedure would be to conduct an official investigation, which would be expected to show that the polygraph had been wrong. Thus, in a security screening situation, there are several safeguards designed to detect false positive errors, and they are more likely to be discovered than false negatives.

THE ISSUE OF COERCION

It has been argued that if the taking of the polygraph test were mandatory, the error rate would increase because the element of coercion would cause anger and resentment which could cause reactions on the polygraph charts. While I agree that coerced exams would be expected to increase the error rate, I question the seriousness of the problem. My experience with compulsory aperiodic examinations by employers in the industrial sector has led me to believe that the degree of coercion in the context envisaged by DOD would not be likely to have a serious affect on the accuracy of the polygraph.

One can argue that few things in life are entirely free of some degree of compulsion or coercion effected by peer pressure. How many workers would voluntarily spring out of bed in the predawn gloom of a wintery morning if they were no requirement to be at work at a certain time? How many rules and regulations in our society would go unheeded if people felt absolutely no pressure by society to follow them? How many criminal suspects, guilty or innocent, would take a polygraph examination if there were absolutely no social expectations? Yet the polygraph seems to work quite well despite (or perhaps because of?) the social constraints which affect so much of our behavior.

When I was engaged in research with Dr. Raskin at the University of Utah prior to having any practical experience in conducting preemployment, and aperiodic polygraph examinations, I assumed that most job applicants and employees would feel a significant degree of resentment at being asked to take a polygraph test to assess their work record, and that the accompanying anger would generate spontaneous reactions on the polygraph charts, making the test error prone. This certainly seemed to be a reasonable assumption. It was only after I actually started conducting examinations for industrial clients that I learned that things were different than I had assumed.

The vast majority of persons tested did not seem at all resentful about being asked to take a polygraph test. They seemed to accept the procedure as a matter of course. When I challenged them by inquiring about whether they might not feel a little resentment or anger, most of them replied to the effect that they understood the reason for the exam, that they agreed that they were necessary, and that they would probably use it themselves if the roles were reversed. Only a small proportion, about five percent, of the employees and job applicants whom I screened expressed any feeling of resentment or anger about having been asked to take a polygraph test. Not surprisingly, most of those who did turned out deceptive on the test; but far from being errors, about 80% of those were confirmed by significant admissions made following the test. For theoretical reasons I still believe that the error rate should be higher with angry people, but my experience suggests that any such effect seems to be much smaller than I had anticipated. Perhaps the threshold required to produce an effect is higher than expected.

A further observation which I think has some application to the DOD proposal being considered is that when a large company started conducting aperiodic polygraph examinations with its employees who had not previously been examined on the polygraph, the amount of apprehension felt by the employees was inversely proportional to the amount of information that they had about the polygraph. The better informed they were about what the polygraph was, how it worked, why they were being asked to take it, and what areas would or would not be covered in the testing, the better their attitude toward the testing program. There is a natural fear which each of us has that the test will expose the most private recesses of our life, even though they may not be at all related to legitimate employment areas. Once the question areas are known, and their application to the situation is recognized, there is little resentment about the test. Once such employees had been tested, they were much more positive about the polygraph program. Sometimes, when new incidents occurred within the company which required investigation, the older employees who had prior experience with the polygraph would suggest to management that they be allowed to take the polygraph test to clear up the matter.

During the 1960's I served for nearly seven years as an officer in military intelligence. Although I was not at that time a polygraph examiner, I had a number of discussions with my colleagues regarding security measures, including the polygraph. Most people with access to highly classified information fully agree with the overriding need to safeguard that information and appreciate the heavy responsibility they have to maintain in the security of that information. Indeed, if they didn't feel that responsibility I don't think they should be entitled to handle that information. In my experience, many of them felt that the security measures were sufficiently loose that they could be easily circumvented by anybody who wished to do so. The number of major espionage cases involving American citizens since that time suggests that the situation has not much changed. It is my opinion that many, if not most, people with access to such highly sensitive information would both understand and agree with the need to tighten security, even if it meant taking polygraph examinations when asked. I think that the majority of persons with SCI access would consider the polygraph a reasonable security measure, as long as it were being administered competently and fairly. For all of these reasons, I think that the danger of errors caused by the test being compulsory is relatively small, and should not deter the use of the polygraph in this situation.

Chairman **Tower**. Thank you, Dr. Barland.

I should like to ask a question to which I would like all of you to respond if you will in turn beginning with Mr. Ansley.

Let me pose a hypothetical question. Suppose in an aperiodic counterintelligence examination an individual shows no response to any question except for one.

On that one question there is a clear physiological reaction. This reaction continues with regard to the one question throughout each of two or three successive examinations.

Can you conclude under these circumstances that there is something about the question to which the person continues to react that is troubling the person being interrogated?

Mr. **Ansley**. From your description, sir, yes, where the response is consistent to that question, there are no reactions to other equally relevant questions and equally stimulating questions.

No matter where that question is placed in the sequence in the test, he responds physiologically to that question and no other question, I think you can conclude statistically from a practical knowledge there is something about the content of that question that bothers the person.

That is not to say he is lying. There are innocent associations coupled with that topic. That is why we would stop testing at that point and discuss it with the person.

It may be the wording, some innocent association, something that is not disqualifying that they want to discuss.

Mr. **Wilson**. I agree with Mr. Ansley.

Dr. **Saxe**. I think there is something to Mr. Ansley's point, but it does not necessarily have to be a sign of deceptiveness.

Dr. **Raskin**. I would agree with that also.

I would add that you can't necessarily resolve it by discussing it with the subject. The fact that repeated examinations achieve the same results points to the problem.

You can't accept their explanations either. They may be lying about their explanation. It presents a very difficult problem. That is where many of these false positive errors come from.

Dr. **Barland**. I would agree with Mr. Ansley's remarks.

It is obvious that the question is causing the reaction. It is obvious that there is some aspect of the question that is emotionally important to the person and the issue becomes why is that question emotionally important to the person?

In the absence of any explanation which can be verified by additional testing, the reasonable conclusion is that the person is holding back information that he considers to be important.

Chairman **Tower**. Also for comment by each member of the panel.

Do you agree that the polygraph accurately measures physiological response and do you believe there is a connection between the shift in physiological response and untruthfulness?

Mr. **Ansley**. Yes.

Mr. **Wilson**. Yes, Mr. Chairman.

Dr. **Saxe**. It measures physiological reactions, but there is no necessary connection between that reaction and truthfulness.

Dr. **Raskin**. I would agree with what Dr. Saxe said and add there is a wide variety of what can be called physiological responses. Unless you have a highly structured and conducted test, you are at a loss to explain that reaction.

Dr. **Barland**. The reactions are related to deception, not per se. That is, there are many things that can cause reaction.

The relationship between the reaction and deception is derived almost entirely from the context of the situation, from the way the situation is structured, and from the fact that it is possible to structure a situation in such a way that other sources of reactions can be factored out so that if there is a response remaining, the single most reasonable assumption will be that it is caused by being deceptive or holding back information.

One would not always be right in making that assumption, but that would be the most reasonable assumption, once all other sources have been factored out by the way the situation is structured.

Chairman **Tower**. One final question for each of you to comment on.

What is your assessment of DOD's proposed program to utilize the polygraph for counterintelligence purposes?

On balance would you recommend the program be adopted as discussed today?

I think all of you heard General Stilwell's testimony. Would you recommend that it be adopted, that it be modified or that it be abandoned?

Mr. **Ansley**. My answer, of course, is that I would recommend it be adopted.

Mr. **Wilson**. Mr. Chairman, I could agree with the adoption of the program for access to highly classified information.

I do believe there is some need for oversight of the Federal examiners.

Dr. **Saxe**. My assessment is that the program should be abandoned or drastically modified.

It seems to me that what is happening is that we are moving in the direction of only using the polygraph, because it is distasteful, to the situations which are most crucial to national security.

It is precisely in those situations where the polygraph I think is apt to have the most difficulty.

In your two previous rounds of questioning you asked about essentially the question of the false positive, but it seems to me we can also talk about what happens if a person is not able to respond to any of the relevant questions in a physiological way.

That does not mean that the person is withholding information. It seems to me if we increase reliance on the polygraph, that we are setting up a situation where we are going to have a number of errors and those could be costly in terms of our national security interests.

Dr. **Raskin**. I think it is a very difficult political decision to make, frankly, because one has to balance the risks of such a program against the benefits.

In this case I think the risks are a disruption of many people's lives, perhaps 2,000 a year from the testimony today, for no good cause except the benefits to national security programs.

If one is to go forward with such a program, it would necessarily involve modifications which would include oversight capabilities, regulation of Federal polygraph examiners, upgrading of their training, and competence in the areas of psychology and scientific sensitivity as well as an expanded and ongoing research program to answer some of the serious outstanding questions and to evaluate the program in what I would consider to be a useful way as it proceeds.

Dr. **Barland**. I would agree with Dr. Raskin's comment on the need for more research and upgrading of standards.

Nonetheless, I believe that until that can be accomplished, the program as proposed should be approved and implemented.

Chairman **Tower**. Thank you, gentlemen.

Senator Levin?

Senator **Levin**. Mr. Chairman, could we ask the witnesses to submit for the record the specific modifications that they would make?

Most, if not all, of them said that modifications would be appropriate. It would be helpful.

Chairman Tower. I believe Dr. Saxe and Dr. Raskin both suggested that.

If we could impose on you gentlemen to submit your recommendations for modification, it would be useful.

Senator Levin. Dr. Barland also said it should be modified, but we ought to implement it in the meantime.

If we could have the specific modifications he would support.

I think Mr. Wilson also talked about oversight. Anything in that line that he would recommend.

Mr. Ansley did not say anything about modification, obviously.

Chairman Tower. Any of you may submit any additional comments that you would like.

[Additional information follows:]

RECOMMENDATIONS FOR MODIFICATION OF DOD PROPOSALS

Dr. Leonard Saxe. I will restrict my comments primarily to the policy section of DOD's Polygraph directive. These comments are based on the directive version that was most recent as of 1 January 1984. In general, my judgement is that the policy is not implementable and that subsections of the directive provide contradictory policy. Specifically:

Section C.2. indicates that "The polygraph shall be employed only when the person to be examined has consented to the examination." Yet, Section C.9. provides that "adverse consequences" may follow from a person's refusal to participate in a polygraph examination. If refusal results in adverse consequences, then it cannot be considered voluntary. One or both sections must, thus, be modified. In addition, Section C.12. provides that polygraph examinations are "required". That is totally inconsistent with Section 2.

2. Section C.5. indicates that all questions, ". . . other than technical questions necessary to the polygraph technique, must have a special relevance to the subject of the inquiry . . . [and] . . . questions about conduct which have no security implication or are not directly relevant to an investigation are prohibited." One problem with this policy is that technical considerations (specifically, the need to design control questions) may require that a host of issues irrelevant to the inquiry be asked. Additionally, in the context of a counterintelligence investigation, it is unclear what material is relevant. Thus, for example, if an investigator assumes that an individual's sexual practices are a potential source of vulnerability to blackmail, then issues related to sexual orientation would be relevant. The policy should more clearly describe what is relevant/irrelevant.

3. In Section C.6., the use of technical questions designed to be embarrassing or intrusive is prohibited. Implementation of such policy is impossible if a control question test is employed. Control questions, by definition, are arousing even to innocent/non-deceptive subjects. I do not understand how a question could be arousing if not also embarrassing or intrusive. Again, implementation of this policy seems impossible, assuming that present polygraph techniques are to be employed.

4. Section C.7. provides that polygraph examinations be considered as supplementary and not a substitute for other forms of investigation. Yet, Sections C.11.b/h allow "aperiodic" examinations. If subjects are chosen at random, the tests are not supplementary to other forms of investigation. If polygraph tests are employed at all, it would seem far better to do them after an investigation indicates a potential problem, rather than before.

5. Sections C.11. (particularly subsections i-k) and C.12. allow or require the use of polygraph tests in the most critical and sensitive national security positions. Such policy seems misdirected given the potential for false negative decisions for individuals trained in polygraph countermeasures. Present research does not support such reliance on polygraph tests.

6. The regulations which follow the policy statement (5210.48-R) include, a section ("D. Limitations") which, like the policy statement, seems inconsistent with present application of polygraph techniques. Thus, Section D.4. indicates that the polygraph instrument not be utilized as a "psychological prop". As indicated in responses to Sen. Warner's questions about the "deterrence" value of polygraph tests, each of the proponents indicated that it was one of the reasons to employ such polygraph techniques. The psychological inducement provided by polygraph tests (and the instrument is a central component) is a primary reason that examinations yield a high

number of confessions. Another provision of Section D (5) requires that subjects who are not in sound physical or mental condition not be given a polygraph test. That requirement seems to require sophisticated medical and psychological judgement that government polygraph examiners would seem untrained to exercise. Although the regulation also suggests that doubts about physical or mental condition be referred to medical authorities, my understanding of current practice indicates that this is rarely done.

Senator LEVIN. We have heard a lot about false positives. I don't know the lingo here.

I will ask Mr. Ansley this question.

What about the false negatives? What is that percentage?

Mr. ANSLEY. False positive is when you call a truthful person a liar.

In our practical experience with aperiodic examination, despite all the speculations, it simply has not happened. We have no way of knowing what the false negative rate is, that is, how many people we call truthful are in fact deceptive.

We will find out in the long run in a practical way.

Senator LEVIN. Aren't there ways of testing for the false negatives?

Mr. ANSLEY. Yes, I think so.

As we pointed out, there are some dangers in taking the research laboratory data and apply that to the field. For example, the research data on false positives just has not happened that way in the real world.

I am very hesitant to say that the research data on false negatives is practical when the other one has not proved out to be.

Senator LEVIN. Do you have a belief based on your own study in this area and experience as to what the false negative rate is?

Mr. ANSLEY. Really from a practical sense, I cannot tell you what that is. We have no way of measuring that in a practical sense.

Senator LEVIN. Nor do you have an opinion?

Mr. ANSLEY. No; I don't because it would be too much of a guess.

Senator LEVIN. Would you acknowledge that there is some likelihood of at least some false negatives?

Mr. ANSLEY. Certainly.

Senator LEVIN. What is the cost of this program?

Mr. ANSLEY. I really don't know. Can I get back to you on that?

Senator LEVIN. Does anybody happen to know?

Chairman TOWER. We can get that for the record. We will have the staff get that.

[The information had not been provided by the time this hearing transcript was sent to press.]

Senator LEVIN. Dr. Saxe, how do we measure the deterrent effect of this?

Dr. Raskin and you are the two most severe critics. Would you acknowledge there is some deterrent effects here that we should weigh?

Dr. SAXE. To be sure, there is a deterrent effect. What concerns me, however, is that over time that deterrent effect is lessened and that if, in the vernacular, the word "gets out" on polygraph tests, then over time its deterrent may be significantly less than it is today.

I have no doubt that people fear it. What I fear is that in the future when you have large, large numbers of these examinations being conducted that they will not have the same deterrent effect.

Dr. **Raskin**. I would disagree somewhat with Dr. Saxe.

I don't think when the word gets out that helps very much, especially since people continue to confess at a high rate following a deceptive outcome.

I think the deterrent effect is substantial and will be so with examiners who are trained to get that information and follow up.

Senator **Levin**. Mr. Ansley, going bact to 1,770 samples for a minute, you said out of the 1,770, 71 were required to take the polygraph a second time or did take it the second time.

Mr. **Ansley**. Correct.

Senator **Levin**. All but four were cleared the second time.

Mr. **Ansley**. Right.

Senator **Levin**. The third time were those four cleared?

Mr. **Ansley**. Yes.

Senator **Levin**. So out of the 1,770, about 4 percent roughly were false positive?

Mr. **Ansley**. Not necessarily false positive. The majority of those were not indicating deception. A few were and did make some statements to us.

Among those 30 who provided information, most of them were inconclusive.

I want to make the point an inconclusive test is the practical thing we report when we are not sure.

In quality control the polygraph examination in the Federal Government, not just the Secret Service, is reviewed by senior examiners who must agree with that chart interpretation by the initial examiner.

If there is disagreement, then we conduct another examination.

Rather than disagree, they usually indicate we don't think these test results are up to standard and we want to be certain. So, to be fair to people, we have an inconclusive range. That inconclusive range is really important, not only in fairness, but in accuracy.

Senator **Levin**. There were none that had to be investigated beyond polygraph testing?

Mr. **Ansley**. That is correct, except for the case involving the approach where we are continuing the investigation; but that person was truthful about his version of what happened according to a witness.

The investigation continues, but not because of deception on the part of the person.

Senator **Levin**. Is there a standard test that is given? Is this the same test given year in and year out for these folks or will we vary the questions?

Mr. **Ansley**. The questions, you will recall, are varied to fit the person, to fit their vocabulary and fit their experience.

Senator **Levin**. Is it basically the same questions?

Mr. **Ansley**. It will be similar, but not exactly the same.

Senator **Levin**. Is there a public document sample of that test?

Mr. **Ansley**. Yes.

Are you referring to a sample of the questions or the topic, because the topics are espionage and sabotage.

Senator LEVIN. Could you give us a set of questions?

Mr. ANSLEY. Yes, I would like to make the point it is not precisely what is going to be asked of each person.

Senator LEVIN. You will tailor it to each person, but before you tailor it, can you give us that set of questions?

Mr. ANSLEY. We have a set of topics and we develop the questions for the person.

I can give you a sample to say this is what we would probably ask in a situation where the person had no intelligence experience in the past and had not been involved in intelligence situations.

Senator LEVIN. Could you give us a couple of actual sets of questions that you have utilized, without giving us the answers?

Mr. ANSLEY. Yes.

Chairman TOWER. Or identifying the person.

Mr. ANSLEY. Absolutely.

[Retained in committee files.]

Senator LEVIN. I have a number of other questions for the record. I know we have imposed on these witnesses, Mr. Chairman.

Perhaps we can impose further if the Chair will allow these questions for the record.

Chairman TOWER. Senator Warner?

Senator WARNER. Thank you, Mr. Chairman.

I will ask one question and then defer to my colleague, Senator Bingaman.

Dr. Barland, I was impressed by your testimony to the effect that it acts as a deterrent.

What body of data supports that?

I happen to concur with your judgment. I wonder whether there is a body of data that supports that?

Dr. BARLAND. There is no scientific data on that issue. I base my opinion entirely on anecdotal information, that is, case histories, the statements made by confessed spies and things of this sort.

I believe in the 1984 DOD Report there is a chapter on case histories and I am incorporating some of that data also in my opinion.

Senator WARNER. Can any other witnesses contribute to that question as to any body of data that supports the opinion that it provides a deterrent?

If not, thank you, Mr. Chairman. I defer to Senator Bingaman.

Chairman TOWER. Senator Bingaman?

Senator BINGAMAN. Thank you, Mr. Chairman.

Let me ask the following of any of the witnesses who would like to comment. We are talking about the deterrent effect.

In the case of deterring the disclosure of unauthorized information, I gather it is the general consensus that having the threat of a polygraph hanging over a person does deter the person from making unauthorized disclosures of information.

Chairman TOWER. Senator, would you yield to me at that point? Would you mind adding on to that question deterrent to anyone who might seek to penetrate the system for the purpose of getting information?

Senator BINGAMAN. I gather that is another part of the deterrent effect.

Chairman TOWER. If you will accept that as an amendment to the question?

Senator **Bingaman**. Sure. I don't know that it fits the rest of the question, but I agree that is another aspect of deterrent.

In the way in which there is deterrence against a person disclosing unauthorized information, I am concerned about the likelihood that there is also a deterrent in the following situations: that if you have the threat of a polygraph, that there is a great tendency on the part of people subject to that threat to keep their mouths totally shut regarding anything that is going on in their agency or in connection with their work, whether it is authorized information or unauthorized, in order to avoid being subject to a polygraph exam.

That is a sort of chilling effect which I think many of us have worried about.

Could you comment, Mr. Ansley, on that and whether you think that is a real concern?

Mr. **Ansley**. Obviously, it has to be a concern. Part of the introduction of these programs requires that we talk to the groups of people, that they clearly understand that we are talking about sensitive compartmented information that is lawfully classified information.

That is what we are talking about in the quesitions that we ask in the polygraph test, and in security awareness programs that are quite effective throughout the Department of Defense for people who have access to classified information, to understand what is classified and what is not classified information.

We do not intend to use polygraph on any information except that which is lawfully and properly classified. Not for any other purpose.

Senator **Bingaman**. Mr. Wilson, do you have any thoughts on that?

Mr. **Wilson**. My experience in New Mexico is that Government managers often use a threat of test rather than the actual test to stop flow of information that you are describing.

I don't think it is a particular problem with the licensed competent examiner of integrity. Government managers frequently, at least I have encountered many who have used it as a threat to deter the disclosure of just embarrassing information.

Senator **Bingaman**. Dr. Saxe?

Dr. **Saxe**. There aren't data. My hypothesis is that the deterrent will not be effective for an actual agent of a foreign government.

If it is going to have a deterrent effect, it will be on someone who discloses something at a much lower level. So, to that extent, there may be an unwillingness to talk to anybody about anything and that in the long run may have an adverse effect on the openness of our Government.

Dr. **Raskin**. I think there are many documented cases of deterrence with regard to people who did not seek such a position because of the problem of having to get through a polygraph test.

I think within the confines of the proposal that we are talking about here there is a very serious potential problem especially if you have aperiodic random selection of people for testing.

I think that you would develop a situation where people would be concerned that if they actually were behaving in some way which is not illegal, not disclosing sensitive information, that they would then be selected for aperiodic testing or for specific testing and that this leads to very serious consequences even if there are no ultimate consequences.

If one goes back to the hearing record of 1977 and 1978 before the Subcommittee on the Constitution of the U.S. Senate, there is a lot of testimony from corporate executives of major corporations who pointed to many of these problems as the reason why they don't use polygraph in their own corporate business operations.

Dr. **Barland**. I share your concern about the chilling effect it would have. I am sure it would have a chilling effect on some authorized disclosures.

I think that in the very complex equation of the advantages versus the disadvantages of the polygraph program this would certainly be one of the factors in the negative side of the equation.

While I think the advantages outweigh the disadvantages, that would be a disadvantage that must be considered.

Senator **Bingaman**. That is all I have, Mr. Chairman.

Thank you very much.

Chairman **Tower**. Gentlemen, thank you very much. This has been enormously useful to the committee.

It would be a lot easier on us if you had all agreed on everything. But we do appreciate your expert testimony.

If you could supply answers to the questions that the members will submit to you for response in writing, we will be grateful to you for that.

Thank you very much.

The statements of the Department of Justice and the Central Intelligence Agency will be entered in the hearing record at this point.

[The statements of the Department of Justice and the Central Intelligence Agency follow:]

U.S. Department of Justice,
Federal Bureau of Investigation,
Washington, D.C., March 5, 1984.

Hon. John G. Tower,
Chairman, Senate Armed Services Committee, Washington, D.C.

Dear Mr. Chairman: The Department of Defense (DOD) has advised us that your Committee has requested from us a statement for the record regarding FBI views of DOD's proposed limited expansion of its polygraph program. This statement is being submitted since Assistant Director Edward J. O'Malley will be appearing before the Senate Select Committee on Intelligence at the same time your hearings are being held.

The DOD has briefed us on this limited expansion of its polygraph program to allow its components to establish a counterintelligence-scope polygraph examination as a condition of access to information protected within its special access programs. These programs, I understand, cover intelligence, sensitive research and development, and covert types of military operations.

We are carefully considering our own responsibilities in this area and I am writing to convey the FBI's support of the DOD program in principle. There can be no doubt that the programs which are at stake here are the prime targets of hostile intelligence efforts, which, regrettably, continue unabated within the United States and abroad. DOD is concerned, as are we, that background investigations generally do not provide sufficient assurance that such programs are not penetrated. The polygraph is one tool available for this purpose. If it is utilized by professional examiners under tightly controlled conditions, it can produce unique and significant information which is not otherwise developed by background investigations, as the experience of CIA and NSA has clearly demonstrated. Where such highly sensitive information is at risk, it only seems prudent to bring to bear all the means we have to deal with the threat.

The DOD proposal is a limited one, but is focused upon the area of greatest concern. It also provides many safeguards for the polygraph process to protect the rights and privacy of those who would be affected. We believe it would clearly improve the security of DOD programs.

We understand that the Committee will consider the proposal at a hearing scheduled for March 7th. We would respectfully request this letter be made part of the record for that session.

Sincerely yours,

William H. Webster, *Director.*

Central Intelligence Agency,
Washington, DC, March 7, 1984

Hon. John Tower,
Chairman, Committee on Armed Services,
U.S. Senate, Washington, DC.

Dear Mr. Chairman: I understand that your committee will consider the Department of Defense proposal to expand use of the polygraph at a hearing scheduled for 7 March 1984. The essential feature of the proposed expansion would permit the heads of Defense components to establish a limited, counterintelligence-scope polygraph interview as a condition of access to classified information protected within special access programs created pursuant to Executive Order 12356. These special access programs include intelligence programs, as well as research and devlopment, and operational activities of particular sensitivity.

I wholeheartedly endorse the Defense proposal. As you know, I am required by law to protect intelligence sources and methods (50 U.S.C. § 403(d)(3); 403g). It has been the experience at both CIA and NSA after over thirty years of use, that the polygraph is a uniquely effective investigative tool in developing information of security significance with respect to persons who will have access to intelligence sources and methods and other sensitive infomation. Its use for this purpose else where in the government, however, has been limited, notwithstanding the fact that these departments and agencies often have access to exactly the same information.

The Defense Department proposes a very limited expansion, both in terms of those affected by the requirement and in terms of the effects on particular individuals. Clearly, however, it will provide more security safeguards for our most sensitive intelligence programs, involving Defense personnel, and will more effectively ensure that these programs are not penetrated by hositle intelligence agents.

I urge, therefore, the Committee to support this initiative, and permit Defense to proceed with its implementation.

With your permission, I ask that this letter be placed in the record of the hearing on this proposal.

Sincerely,

William J. Casey,
Director of Central Intelligence.

[Questions submitted by the Senators of the Senate Armed Services Committee to be answered for the record follow:]

QUESTION SUBMITTED BY SENATOR STROM THURMOND

Senator THURMOND. Good morning, gentlemen. It is a pleasure to have you here today to give us testimony on polygraphs.

The subject of polygraph usage is very emotional. There are certainly legitimate security reasons for having polygraphs, but there are also legitimate concerns about infringing upon personal freedom that warrant restricting their usage.

I do not feel that opponents of polygraphs do the argument justice by making reference to police state tactics and proponents cannot cloak the argument entirely in terms of national security.

Polygraphs are not entirely reliable and under our form of Government we should err on the side of the individual unless there is an overriding national security problem involved.

I have long been involved in national security matters, but I am also a lawyer and a former South Carolina Circuit Court Judge, so I am fully aware of the concerns on both sides of the issue. Hopefully, we can reach an area of agreement that protects us as a Nation and also protects the rights of individuals.

As I understand, our national laboratories are doing work in the field of polygraph technique. Can you illuminate us on the progress or is the material classified?

Dr. RASKIN. My laboratory at the University of Utah is presently conducting research on polygraph techniques under contract with the U.S. Army Mobility Equipment Research and Development Command at Fort Belvoir, Virginia (Contract No. DAAK70-82-C-0198). The purpose of the contract is to develop a computer-based polygraph system which will use advanced computer techniques to analyze and interpret the polygraph recordings in a more powerful and objective manner than is possible for a human interpreter. We have made a great deal of progress on that approach and expect to be able to achieve a field operational system within 5 years or less. The project is also assessing some of the techniques and problems posed by the potential for people to be trained to beat the polygraph test by using physical maneuvers to create false reactions and throw off the interpretation of the test outcome.

QUESTIONS SUBMITTED BY SENATOR JEFF BINGAMAN

Senator BINGAMAN. General Stilwell, the latest version of proposed DOD rules on polygraph use has dropped the requirement for a periodic polygraphing for indiviuals with access to Sensitive Compartmented Information (SCI). Why did DOD change its mind on the need for such a broadscope program of polygraph examinations?

General STILWELL. The number of personnel with access to SCI is relatively large, consequently, the changes with respect to aperiodic polygraph examination were made to limit the number of personnel potentially affected to those who truly have access to the most sensitive classified information held by the Department. This revision is consistent with comments and recommendations made by members and staff of various congressional committees and subcommittees who have expressed an interest in this matter.

Senator BINGAMAN. Deputy Secretary Taft, at his confirmation hearings expressed serious concern about the reliability of polygraph in the criminal investigation context. Do you agree or disagree with that assessment? Why?

General STILWELL. The Department recognizes that the polygraph is not infallible and has, therefore, historically followed the policy that the polygraph will be used only as an aid in support of other investigative techniques and be employed generally, only after investigation by other means has been as thorough as circumstances permit. Our extensive experience in this area clearly indicates that polygraph examinations can, when administered by qualified, professional examiners, be extremely useful in securing and verifying evidence or information that could not be obtained by other means.

Senator BINGAMAN. General Stilwell, in the current version of the rules, initial and aperiodic examination of personnel for access to "specifically designated information within a special access program" is authorized, when approved by yourself. Has it traditionally been your responsibility to make substantive decisions about the relative sensitivity of information? Do you currently designate programs as special access? If not, who does?

General STILWELL. Executive Order 12356, "National Security Information," dated April 2, 1982, and predecessor Orders, provide that the head of a department or agency, to include the Secretary of Defense and Secretaries of the Military Departments, may create "special access programs" to protect extremely sensitive classified information when ordinary security measures are considered inadequate. Traditionally, I have been delegated this authority by the Secretary of Defense.

In order to maintain oversight of special access programs, the Secretaries of the Military Departments are required by internal DOD regulation to notify my office of any special access programs which they may establish. Additionally, other government agencies who seek DOD involvement in special access programs that they have created must coordinate with my office before such programs are implemented within DOD.

Under the Department's proposed polygraph policy this system or procedure would not be affected except that there would be added a requirement that establishment of the polygraph as a condition of access to information within a special access program would require my approval.

Senator BINGAMAN. General Stilwell, presently, how many individuals in DOD would fall within the terms of this provision? How many would you expect over the next three years?

General Stilwell. As I indicated in response to Senator Bingaman, there are approximately 4 million civilian, military and contractor personnel in the DOD work force. It is estimated than less than 1 percent of these personnel would be potentially affected by the proposed changes. Aside from polygraph examinations conducted by the National Security Agency, the Department currently conducts approximately 8,000 polygraph examinations per year. Given the Department's existing polygraph resources, and the time and resources necessary to train polygraph examiners to the level necessary to meet our high professional standards, it is expected that it would take at least three years before we could reasonably expect to be able to conduct 16,000 or double the number of examinations currently being conducted. Of these, approximately 8,000 would be those conducted under the provisions of the new program.

Senator Bingaman. General Stilwell, what criteria are presently applied in determining whether a program should be designated "special access?"

General Stilwell. Under Executive Order 12356, agency heads may create special access programs to protect particularly sensitive classified information. The implementing directive, Information Security Oversight Office (ISOO) Directive 1, stipulates that special access programs may be created or continued only if (1) normal management and safeguarding procedures do not limit access sufficiently; and (2) the number of persons with access is limited to the minimum necessary to meet the objective of providing extra protection for the information. In DOD, special access programs protect basically three types of information: intelligence; research and development, and military operations.

Under our proposed revision, it is envisioned that the polygraph would be used in special access programs only when it is determined in writing that unauthorized disclosure of the information in question could reasonably be expected to result directly in the loss of: Human life; Intelligence sources or methods which are vital to the fulfillment of national security requirements or which provide a unique capacity to intelligence agencies of the United States; or Technologies, plans, or procedures vital to the strategic advantage of the United States.

Senator Bingaman. General Stilwell, how many programs in DOD are currently designated "special access?" What has been the trend in the number over the last four years?

General Stilwell. Over the past four years there has been an increase of approximately 75 percent in the number of special access programs within the Department of Defense. In 1980, there were 60 programs reported to my office. Today, we have recorded 105 programs in our system of accounting.

Senator Bingaman. General Stilwell, how many serious disclosures of classified information during the past few years could have been prevented by use of the polygraph in screening or aperiodic examinations, under the new rules as proposed?

General Stilwell. It is difficult to speculate in terms of precise numbers, as to how many serious disclosures of classified information might have been prevented by use of the polygraph. However, as I indicated in my statement, the Department anticipates that its proposal for screening and aperiodic use of the polygraph will be of significant value in deterring and detecting espionage. This assessment is supported by the fact that in a number of instances, individuals who were the subject of espionage cases uncovered in recent years have specifically indicated that they refused either suggestion or direction from hostile intelligence to seek employment or assignment to agencies or activities where a polygraph examination was a requirement. Moreover, experience gained at the National Security Agency, where the polygraph has been used for a number of years to assist in screening applicants for employment, reflects that the polygraph has been extremely useful in developing counterintelligence related information to include identification of attempted penetrations of that agency by hostile intelligence.

Senator Bingaman. What research is currently being sponsored by DOD to assess the validity of the polygraph as a screening technique?

General Stilwell. The National Security Agency (NSA) currently has two contracts being processed relating to polygraph research. One contract, a pilot study, involves the use of biofeedback, and will give an indication of whether or not electrodermal biofeedback enhances or degrades the detection rate. This research has implications for countermeasures, technique development, chart analysis, and instrumentation. The instrumentation includes the use of a plethysmograph, measure of peripheral blood flow. The contract group, not receiving biofeedback, provides information on the laboratory accuracy of the specific technique, as guilty knowledge paradigm. A second contract is developing a quick reference manual for polygraph examiners describing the effect on polygraph charts of the 200 most commonly used prescribed pharmaceuticals. This research has implications for subject variables, countermeasures, and chart analysis.

In 1984, the NSA plans to contract for studies on the effects of repeated testing. The research will provide information on validity and reliability of the specific techniques employed in the research. NSA also expects to contract for a study to compare visual presentation of the questions to the present method. There are validity and countermeasure implications to this study. NSA will contract for research on countermeasure and technique enhancement in coming years.

Moreover, NSA and the FBI are establishing a joint polygraph research facility. Immediate emphasis will be studies involving the validity of the use of a relevant-irrelevant technique and a control question technique in a screening paradigm. Research will be conducted on technique development, specifically techniques to isolate the exact role of a suspect in a crime or incident. There will also be research involving the evaluation of various physiological sensors and methods of displaying and evaluating the information. The laboratory will be staffed with psychophysiologists and polygraph examiners.

AIR FORCE

The Air Force Office of Special Investigations is currently working on a proposal for Deputy Under Secretary of Defense (Policy) approval for a research project to determine the validity of the polygraph technique in counterintelligence/security testing. The proposed research will field test the validity of specific polygraph control question techniques in which relevant questions address only the counterintelligence issues identified in the draft DOD Directive 5210.48. The proposed research will include a pilot study to ensure correct methodology and then a long range project to gather and analyze data and prepare interim and final reports.

U.S. ARMY

The U.S. Army Intelligence and Security Command is also considering a proposal for research in the areas of polygraph instrumentation and countermeasures.

Senator BINGAMAN. Dr. Raskin, what is your feeling as to the possibilities of successful countermeasures to the polygraph, based on your and others' research?

Dr. RASKIN. We have already demonstrated that it is possible to train college students and people recruited from the community to beat the test. In one experiment 70 percent of our subjects were able to beat the test after approximately 30 minutes of training in the simple physical maneuvers of biting the tongue and flexing the leg muscles during and following the presentation of control questions. However, we have very promising results which show that special measures of muscular activity can be used to identify those people who are practicing such countermeasures. Those results are preliminary and require further research and development. To my knowledge, there is no other scientific research being conducted on countermeasure. Since field polygraph examiners do not have the ability or equipment to detect such countermeasures, it is imperative that such methods and equipment be developed and be made available to the field do that individuals who make such attempts to beat the polygraph and thereby penetrate our security systems may be apprehended. Our contract with the U.S. Army is in its second year, but I understand that there may not be funds available to continue it, and it may have to be canceled. In my opinion, the annual cost of $90,000 is very small compared to the magnitude of the very pressing problems faced by the DOD and the benefits to be derived from the research.

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN

Senator LEVIN. What modifications to DOD Directive 5210.48 would you recommend?

Dr. Raskin and Dr. Barland, could you please explain why you feel these modification would be necessary and the purpose they woud serve.

Dr. RASKIN. I have described some of the major problems and needs for revision in my written statement. I feel that the scope of the proposals is too great for practical application of screening techniques. If 10,000 people per year are to be screened with polygraphs as General Stilwell stated, there may be as many as 2,000 false positives per year. According to the procedures specified by the Directive, each such error of falsely accusing truthful individuals of deception would require a field investigation. At a cost of $5,000 to $10,000 per investigation (my estimate), that could cost up to $20 million per year to correct those errors, not to mention the personal problems created for those individuals. Therefore, I suggest that such investigations by undertaken only if there is other information in addition to the polygraph which points to the need for further investigation. It the absence of additional reasons or admissions by the individual, it may be unwise to take any further action.

A second area needing modification is the lack of oversight of the polygraph program outside the DOD. The proposed program lacks adequate safeguards to ensure that the implementation is of the highest possible quality. It is imperative that there be definite standards developed to upgrade the quality of the training program of the U.S. Army Polygraph School and the training and competence of the staff who run that school. They need to employ the services of Ph.D. level psychologists who can provide the type of scientific and professional sophistication and integrity which seem to be lacking at this time. There is also need for a thorough, independent evaluation of the quality control procedures currently employed in the Department. It is my definite impression that they are substandard and that the procedures are not adequate to guarantee the highest quality of performance in the field.

A third area is the need for a built-in program of research and evaluation to provide answers to the problems of sources of errors, base rates of deception, effectiveness of countermeasures and methods for detecting their use, and improvements in techniques and instrumentation. That program should be made an integral part of any polygraph program, including the proposed expansions and those already operating within the DOD.

Dr. **Barland**. I believe that the DOD polygraph program ought to be implemented as proposed. I believe that current quality control procedures are appropriate and adequate.

A research program should be established to investigate the following issues which are important in screening, and which have not been adequately researched to date.

1. How accurate are screening tests as compared to specific issue tests, in terms of the nature of the acts and the wording of the relevant questions? In specific issue testing, the issue usually involves a physical act which the subject denies doing, and the examiner knows precise details regarding the act, such as the date, allowing precise formulation of relevant questions. In contrast, screening tests often require relevant questions which are broad in scope and general in wording.

2. How accurate are multi-issue tests as compared to single issue tests? Several theories of lie detection would predict that when a subject is concealing information about more than one issue, the polygraph technique may be less accurate in identifying the precise issues involved. The importance of this variable and the factors which may affect it need to be explored.

3. How do various countermeasures, such as drugs, hypnosis, and biofeedback, affect the accuracy of screening tests? There is a complex interaction between the type of countermeasure employed and the structure of the polygraph test. The effect of countermeasures on screening exams has never been explored.

There are a number of other topics that could be researched, such as the effect of compulsory examinations on accuracy, but the three areas above are, I believe, more important. The DOD aperiodic polygraph program should not be delayed until the research is completed, however, for each of those areas deserves major research programs lasting several years.

Senator **Levin**. How much will it cost to implement the polygraph program envisioned by DOD Directive 5210.48?

General **Stilwell**. It is estimated that the initial cost to implement the Department's proposed polygraph program would be 3.9 million dollars. This figure includes the cost of renovating training facilities at Fort McClellan, Alabama, and purchase of equipment. It is expected that the annual cost to maintain the program in succeeding years would be approximately 2 million dollars.

Senator **Levin**. Dr. Barland, at the hearing you indicated that you were aware of individuals who were deterred from applying to NSA and the CIA because they would have had to undergo a polygraph test, and these persons later turned out to spies.

Would you please provide the committee with the names of these individuals?

Dr. **Barland**. I am acquainted with several cases in which the polygraph either served as a deterrent to Soviet spies, or in which the confessed spies said that it would have been a deterrent if they would have been required to take it.

In the early 1960's Jack E. Dunlap was an Army sergeant working at NSA. Army personnel were exempt from being examined on the polygraph. When he retired from the Army, he applied for civilian employment at NSA, which meant that he had to be given a polygraph test. He failed the polygraph and was rescheduled for another test, but committed suicide rather than be reexamined. Investigation showed that he had been a Soviet spy for several years. Although the polygraph did not deter him from seeking civilian employment with NSA, it provided the first evidence that he was a spy, and caused him to terminate both his spying career and his life rather than take another polygraph test.

Christopher J. Boyce was employed by TRW under a CIA contract to work on an intelligence satellite project. In 1975 he started passing crytographic and other sensitive data to the Soviets via their embassy in Mexico City. Later that year the CIA offered him a position directly with them, but he refused it because he knew that he would be administered a preemployment polygraph test by them. [R. Lindsey's "The Falcon and the Snowman", 1980, p. 172.] It was the damage done by this case that prompted the CIA to require the use of the polygraph with civilian contractors working on particularly sensitive projects.

During the late 1970's David H. Barnett was a CIA employee in Indonesia, whose job brought him into contact with members of Soviet intelligence. In about 1980 he retired from the CIA and went into business for himself in Indonesia. When he encountered financial difficulties, he approached his former contacts in Soviet intelligence and volunteered his services. In due time they suggested that he apply for a position with the CIA, DIA, State, or the House or Senate Intelligence Committees. He avoided seeking employment with the CIA because of their polygraph policy.

Perhaps the most damaging case in recent years is that of Jeffrey Prime in Great Britain. He was serving as an intelligence officer with the RAF when he volunteered his services to the Soviets. At their request he sought and was granted employment with GCHQ, and was given access to cryptographic materials. After he was caught in 1983, he told his interrogators that if GCHQ had required a preemployment polygraph test, he would not have sought transfer to them. It was the damage done by this case that has caused the British to explore the use of the polygraph within GCHQ.

Senator **Levin**. Mr. Ansley, would you please provide the committee with two sets of sample questions used in questioning subjects undergoing polygraph tests.

Answer. [Retained by committee in its files.]

[Whereupon, at 12:25 p.m., the committee proceeded to other business.]

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